Report
of the
Chief Inspector of Mines in India
for the years
1920 to 1922

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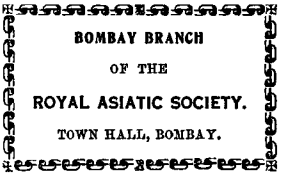

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Department of Mines, India

REPORT

OF THE

CHIEF INSPECTOR OF MINES IN INDIA

UNDER THE INDIAN MINES ACT (VIII OF 1901)

FOR THE YEAR ENDING

31st December 1920

134447

BY

R. R. SIMPSON, M.Sc.
Chief Inspector of Mines in India

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FROM

R. R. SIMPSON, ESQ., M.SC.,

Chief Inspector of Mines in India,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
DEPARTMENT OF INDUSTRIES, SIMLA.

Dated Dhanbad, the 11th June 1921.

SIR,

I have the honour to submit the report upon the inspection of mines in British India for the year ending 31st December 1920.

INTRODUCTION.

It is with great regret that I have to record the death of the late Chief Inspector of Mines, Mr. George Francis Adams, C.B.E., M.I.C.E., which took place on 10th January 1921. Mr. Adams, after serving as an Assistant Inspector of Mines in Great Britain for eight years, joined the Indian Mines Department in 1902, and subsequently held the post of Chief Inspector with distinction for 10 years. He was acknowledged as a mining engineer of unusual sagacity, and his opinion was eagerly sought for on matters pertaining to the mining industry in India. His urbanity of manner and ready tact had endeared him to all those with whom he came into contact. His fine sense of justice, loyalty and sympathetic consideration were fully displayed in his dealings with his staff, the members of which deeply deplore his untimely death.

It may be explained that this report relates entirely to the administration of the Indian Mines Act, 1901. The Act applies to British India only and not to the Indian States. Mines which are less than 20 feet deep are excluded from its scope. For the complete figures of production of all minerals raised from excavations of all depths in British India and the Indian States reference may be made to the statements of the "Mineral Production of India" published annually in the records of the Geological Survey of India, and to the "Quinquennial Review of the Mineral Production of India" published every five years by the same Department. Mysore, where the Kolar goldfield is situated, and Hyderabad (Nizam's Dominions) have their own Departments of Mines. Detailed information of the mineral industries of those States is given in the annual reports of their respective Chief Inspectors of Mines.

SECTION I.—Persons employed.

During the year 1920 the daily average number of persons working in and about the mines regulated by the Indian Mines Act was 234,199, as compared with 249,156 in the previous year. This is a decrease of 14,957 persons or 6·00 per cent. Of these persons 141,029 worked underground and 93,170 on the surface.

One hundred and forty thousand four hundred and eighty were adult males, 85,635 were adult females and 8,084 were children under 12 years of age.

Those employed in coal mines numbered 175,943 which is 14,109 less than those employed in 1919. This decrease accounts for nearly the whole of the

total decrease for all mines. The decrease in the labour employed in coal mines was not due to lack of employment. There was an acute scarcity of coal mining labour in the Bengal and Bihar and Orissa coalfields. In the previous year famine conditions in the recruiting areas had augmented the labour supply. During the year under review crops were more favourable and those driven by necessity to labour in the coalfields in the previous year remained at home. The rise in the cost of living was exploited by agitators, and there was considerable labour unrest. At many collieries there were strikes, but in no case was the stoppage longer than a day or two. From the 1st December the contract rate for coal getting was increased by 25 per cent. whilst those receiving a daily wage of 6¼ annas were granted an increase of 30 per cent. Those receiving higher rates of pay were granted increases on a scale varying from 25 to 5 per cent., the latter being the increase granted to those in receipt of a wage of Rs. 60 per month. The ultimate effect of these increased rates of pay was not apparent at the end of the year, but the labourers were apparently satisfied and there were no more strikes. The general health of the labour force in the major coalfields was good and there was not much epidemic disease.

At the Margherita collieries in Assam there was a shortage of labour. There were 1,642 recruitments and 801 repatriations. The total labour population was 6,999 persons, of whom 4,252 were adult workers. The wages of mine coolies were increased by 35 per cent.

In the Central Provinces the local labour was insufficient, and labourers were imported from Jubbulpur and Chattisgarh. There were no serious epidemic diseases or strikes during the year.

In the Tavoy district, Lower Burma, the number of persons employed was 5,170 less than in 1919, a decrease of more than one-half. This was due to the closing down of many of the mines consequent on the lessened demand for wolfram.

At the lead-silver and iron mines in the Northern Shan States, Upper Burma, there was a considerable shortage of labour. Two or three attempts at strikes came to nothing. There were no epidemics of any kind, and the general health of the labour force was good. A maximum of some 12,000 persons is employed by the Burma Corporation, Limited, but the majority of these are employed at the Company's smelter and on railways.

In the Anantapur goldfield, Madras, wages were increased. There was a local famine, and villages in the vicinity of the mine would have suffered considerably had the mines not been in existence.

In view of the proposed limitation of the hours of labour in India it is of interest to note that in the majority of metal mines in India work is already carried on in eight hours shifts and the mines are closed down on Sundays.

SECTION II.—Output of Minerals.

COAL.

The statement given below shows the output of coal in the various provinces in British India during the years 1919 and 1920.

Province.	*Output in Tons.*	
	1920.	*1919.*
Assam	324,965	291,184
Baluchistan	27,672	29,124
Bengal	4,207,452	5,777,632
Bihar and Orissa	11,973,339	15,117,903
Central Provinces	491,205	497,021
North-West Frontier Province ...	...	20
Punjab	58,078	46,893
TOTAL ...	17,082,711	21,759,727

For the third time only during a period of 40 years a decrease in the annual output of coal took place. The first occasion was in 1885, and the second in 1909. The output in 1920 was 17,082,711 tons. The decrease was 4,677,016 tons or 21·49 per cent., as compared with an increase of 9·64 per cent. in the previous year. The successive increases of output in the last three years have been wiped out, the output in 1920 being less than in 1917.

In the following table the percentage variations in the output of coal* since 1909 are shown :—

	Per cent.		Per cent.		Per cent.
1909.	Decrease 7	1913.	Increase 10·27	1917.	Increase 5·53
1910.	Increase 0·33	1914.	Increase 1·56	1918.	Increase 14·55
1911.	Increase 5·80	1915.	Increase 3·97	1919.	Increase 9·64
1912.	Increase 16·56	1916.	Increase 0·41	1920.	Decrease 21·49

The opening stocks in 1920 were 4,626,460 tons and the closing stocks 2,409,283 tons or just about one half of the closing stocks at the end of 1919. Even this reduced quantity of closing stocks is considerably higher than that recorded in any year prior to 1919. The large closing stocks may be taken as a measure of the inadequacy of the supply of railway wagons during the year.

The despatches amounted to 16,417,631 tons, and 2,278,327 tons were consumed on the collieries. The latter figure represents 13·34 per cent. of the output, as compared with 9·21 per cent. in the previous year. The increase in the percentage of coal consumed at the collieries is regrettable. It may be explained by the fact that for the greatly reduced raisings of coal the same or probably a larger quantity of water had to be pumped from the mines, and, the number of winding and other engines and boilers being the same, if not greater than in the previous year for a larger output, the wastage of steam (*i.e.*, coal) would be greater. The increase in colliery consumption would be even more marked were it not that electrical apparatus is rapidly superseding steam plant.

The amount of coal used for coking was 603,930 tons and 178,162 tons of hard coke and 181,530 tons of soft coke were made. As the iron and steel trades continued in full activity during the year the large decrease in the manufacture of coke is somewhat remarkable. It was probably due to the fact that there were large stocks of coke on hand at the beginning of the year.

Analyses of the figures relating to the output of coal and the manufacture of coke will be found in Appendix I, Table II on page 38.

Practically the whole of the decrease was in Bihar and Orissa and Bengal. Figures for the two major coalfields are as follows :—

	Output in tons.		Percentage of decrease.
	1920.	1919.	
Jharia coalfield	9,294,040	12,145,918	23·48
Raniganj coalfield	4,997,679	6,815,126	26·67

The decrease in Bihar and Orissa was more than three million tons, and in Bengal more than one and a half million tons. There were considerable increases in Assam and the Punjab, and small decreases in the Central Provinces and Baluchistan. The continued decrease in Baluchistan is probably due to the disturbed conditions on the frontier, whilst the increase from 46,893 tons to 58,078 tons in the Punjab is the indirect result of high prices in the Bengal coalfields.

On 31st March 1920 the Government requisition on coal was removed. Later in the year as it was evident that the internal demand for coal exceeded the supply, exports were restricted by Government. There was a great shortage of labour at the collieries, and as a consequence raisings were exceptionally low. Shortage of wagons accentuated the deficiency. Another adverse factor was the decreased output per person employed, which in Bengal and Bihar fell from 117 tons in 1919 to 100 tons in 1920. The large stocks which were held at the beginning of the year were greatly reduced and at the close of the year

* For tonnages *vide* page 44 in the appendix.

there was very little coal of first class quality in stock. Prices for all coal improved very considerably towards the end of the year, specially high rates being paid for small quantities of coal not under contract.

During the first half of the year the coal trade in the Central Provinces was depressed, local demand being somewhat limited and there being little demand from the chief consuming centres such as Bombay and Ahmedabad. In the latter half of the year the trade improved and both demand and prices continued to increase until the end of the year. Full advantage could not, however, be taken of the improved demand as raisings could not be increased to the desired extent owing to shortage of labour.

Figures showing the output per person employed are given below:—

	Tons per person employed.			
	Below ground.		Above and below ground.	
	1920.	1915-1919.	1920.	1915-1919.
British India	166	180	97	113
Bengal and Bihar	171	184	100	116
Assam	161	153	103	100
Baluchistan	59	67	32	40
Central Provinces	100	123	58	81
Punjab	76	68	44	43

The output of coal in the United Kingdom in 1919 was 242 tons per person employed below ground and 193 tons per person employed above and below ground.

MICA.

The output was 44,667 cwts., as compared with 41,683 cwts. in 1919, being an increase of 7·16 per cent. The increase was in Madras and Rajputana, Bihar and Orissa showing a small decrease.

The demand for good qualities of mica was steady throughout the year and prices were good. Owing, however, to the uncertain Exchange and general financial depression the output was again restricted. During the last quarter of the year the local market was greatly depressed. Both in England and America the markets were over stocked owing to the lack of Continental buying.

In the Madras (Nellore) mica field the Kalichedu, Tellabodu and Palamani mines are conspicuous for improved methods of working. In the last-named mine systematic development is perhaps the most marked. The vein is blocked out by levels and winzes driven at regular intervals. It is noteworthy that in practically every drive payable deposits of mica have been proved, and consequently there is now a large amount of "mica in sight" which can be got at any time. It is to be remembered, however, that in these three mines the mica is distributed more or less homogeneously throughout the veins. In the Kalichedu mine some of the more valuable pillars are being extracted and replaced by masonry columns. How these will stand when excavations are made at lower levels remains to be seen.

MANGANESE.

There was a substantial increase in the output of manganese, the figures being 582,636 tons, as compared with 420,184 tons in 1919. This is an increase of 38·66 per cent. The demand for manganese ore during the year was greatly improved and ocean freights were easier. Mineowners, however,

were not able to take full advantage of these favourable conditions owing to the inability of the railways to supply sufficient wagons to carry ore to ports.

The average price during the year was about 10¾*d.* per unit f. o. b. Bombay or Calcutta, which represented a slight increase on the average for the preceding year.

LEAD AND SILVER.

Until the end of the year 1919 the output of lead and silver ores in British India was practically negligible. In January 1920, however, mines in the Northern Shan States, Burma, where the great Bawdwin lead-silver mine is situated, were brought under the operation of the Indian Mines Act.

The output of lead and silver ores from the Bawdwin mine in 1920 was 128,908 tons. The production of refined lead was 23,821·14 tons, and of refined silver 2,869,727 ounces. The average prices obtained were Rs. 409-9-0 per ton of refined lead and Rs. 2-14-6 per ounce of refined silver.

The Bawdwin mines* were worked by the Chinese for centuries, but finally abandoned by them about 1868. The old miners worked the mines for silver, and left behind huge dumps containing hundreds of thousands of tons of rich lead and zinc slags. In 1910 mining operations were resumed by a European Company whose efforts were rewarded by the proving of an ore body of great size and value. The ore channel runs through hilly country, and the mine is at an elevation of 3,200 feet, but a main adit (Tiger tunnel, 7,000 feet in length) connects with the 600 feet level and forms the main outlet for mineral and water. The ore in the Chinaman lode averages 31 per cent. of lead, 29 per cent. of zinc and 30 ounces of silver per ton. In places the zinc is replaced by copper. The proved ore reserves of this remarkable mine are not less than several millions of tons. The method of mining adopted is that known as the square set "rill" system, by which the excavation is temporarily supported by square sets of timber and subsequently completely filled by waste material which descends by gravity through shoots from "gloryholes" on the surface. Power for working the mine is generated at a hydro-electric station and transmitted for 50 miles to the mine at a pressure of 33,000 volts.

WOLFRAM AND TIN.

The decline in the output of wolfram was still further continued, the decrease for the year being 40·34 per cent. The figures were 1,733 tons, as compared with 2,905 tons in 1919. On the other hand there was a large increase in the output of tin ore, the figures being 1,056 tons, as compared with 701 tons in the previous year, the increase being 50·64 per cent.

Purely wolfram mines were practically unworked, and for the latter half of the year about three-fourths of the output of the Tavoy district, Lower Burma, was mixed ore, *i.e.*, wolfram and tin. The number of mixed ore mines at work in December was thirteen. No purely wolfram mines were then being worked, and tin ore was being obtained from eleven mines.

Prices of wolfram dropped from 27*s.* per unit in January to 16*s.* per unit at the end of the year, when the ore became practically unsaleable. There are said to be large stocks of wolfram in Tavoy and Rangoon. The price of tin was at the end of the year £207 per ton.

GEMS.

The output of gems decreased by 1·56 per cent., the figures being 156,108 carats as compared with 158,577 carats in 1919. The output of rubies for 1920, if we leave out the exceptional three lakh stone found last year, was very much the same as that for 1919, but there was a great falling off in sapphires both in quantity and value. In spinels there was a great increase in quantity and a 10 per cent. decrease in value.

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* *Vide* Records, Geological Survey of India, XLVIII, 3, pp. 121-178.

The gem market on the whole was rather unsettled. In the early part of the year the high Exchange upset all dealings with London and Paris. The market was also adversely affected by the French restrictions on the import of precious stones. In the autumn the general stagnation of trade in Europe extended to dealers of precious stones in India, and there was a marked decline in purchases.

In the Burma ruby mining area the number of "native miners" who paid license fees fell from 19,843 in 1919 to 12,559 in 1920. The mines worked by these men are, however, exempted from the scope of the Indian Mines Act.

The production of gem beryl is reported for the first time.

GOLD.

The output of gold increased by 21·93 per cent. The quantity was 13,645 ounces, as compared with 11,191 ounces in 1919. The whole of the gold was obtained from a single mine in the Anantapur goldfield, Madras.

The price obtained averaged from £5-4-4¾ to £5-19-2 per fine ounce. The premium on gold has been largely offset by the increased cost of production.

COPPER.

The output of copper ore was 28,167 tons, as compared with 32,756 tons in 1919, the decrease being 14 per cent. The whole of the output came from a single mine in the Singhbhum district, Bihar and Orissa. Production at this mine was seriously affected by a flood which carried away a railway bridge between the mine and the reduction works. In consequence of this the total output of refined copper from the mine was only 512·22 tons. In addition to this about 800 tons of copper were produced from matte shipped from South Africa. The industry was hampered by a shortage of coal and fluxes. During the year the price of copper steadily declined all over the world, and in India it was sold at prices lower than those quoted on the London market. The average price received was Rs. 1,072 per ton f. o. r.

IRON ORE.

The production of iron ore increased from 101,322 tons to 148,472 tons, an increase of 46·53 per cent. The bulk of this increase came from mines in the Northern Shan States, Burma, which have recently come within the scope of the Indian Mines Act. The iron ore mined in Burma is used entirely as a flux in the smelting of lead-silver ores.

It may be mentioned that the whole of the iron ore used at Messrs. Tata and Sons' iron and steel works at Jamshedpur is obtained from mines in an Indian State, and that such mines not coming within the scope of the Indian Mines Act their figures of production are not recorded here.

CHROMITE.

The output of chromite was 23,123 tons, as compared with 14,067 tons in 1919. The increase was 64·38 per cent. The production was, however, slightly less than in 1918.

OTHER MINERALS.

There were increases in limestone, salt, steatite, samarskite, graphite and ochre, and decreases in slate, barytes, magnesite, potash, clay, fuller's earth and molybdenite.

SECTION III.—Accidents.

During the year 1920 at mines regulated by the Indian Mines Act, 1901, there were 177 fatal accidents, being a decrease of 75 under the number which occurred in 1919, and a decrease of 11 as compared with the average number of the preceding five years.

These accidents involved the loss of 225 lives, which is a decrease of 87 under the number of lives lost in 1919. Of these persons 195 were males and 30 were females. In three separate accidents the number of lives lost was 11, 8 and 5, respectively. In three cases 4 lives, in three cases 3 lives and in twelve cases 2 lives were lost.

The causes of these accidents have been classified as follows :—

	No. of accidents.	Percentage of total number of accidents.
(*a*) Misadventure	98	55·4
(*b*) Fault of deceased	54	30·5
(*c*) Fault of fellow workmen	12	6·8
(*d*) Fault of subordinate officials	3	1·7
(*e*) Fault of management	10	5·6
	177	100

The proportion of the accidents due to falls of roof and sides was very much smaller than in the preceding year. There were 72 such accidents, as compared with 128 in 1919.

The number of accidents which occurred in shafts was 29, or 5 less than the number which occurred in the previous year. In one such accident 11 persons lost their lives in a falling cage. Ten of the accidents were due to miscellaneous causes, and of these four were due to persons being crushed by the descending cage whilst attempting to cross the bottom of a shaft. Pass-byes at shaft bottoms are frequently somewhat circuitous, and persons are inclined to run the risk of crossing the open shaft instead of using the pass-bye. If it can be conveniently arranged it is preferable to provide a protected road round the shaft close to the bottom of the shaft.

There was a satisfactory decrease in the number of accidents which occurred on haulage roads. The number of such accidents was 16 as compared with 40 in 1919.

There were three fatal explosions of firedamp causing five deaths. They were due to the ignition of small accumulations of firedamp in narrow galleries driven in advance of the workings of the mine and without sufficient, if any, means of conducting the air current into the ends of such galleries. The usual excuse offered in such cases is that gas had never been encountered in the workings before. The existing rules under the Indian Mines Act in regard to ventilation and safety lamps are deplorably weak. In the new draft code of revised rules they have been strengthened with a view to the avoidance of such accidents as these, which are clearly preventable.

There were nine accidents due to explosives causing the loss of 12 lives. Several of these accidents were due to the improper arrangements for the custody and handling of small quantities of gunpowder on the surface. Such matters are beyond the control of the Mines Department, but certain mine Superintendents have made rules which, if observed, would prevent such accidents. Such rules, however, have no legal force, and the attention of the Chief Inspector of Explosives has been drawn to the matter with a view to the strengthening of the rules regulating such matters under the Indian Explosives Act, if such is deemed to be advisable.

There were three accidents due to suffocation by gases, causing 8 deaths. Seven of these deaths took place in mica mines. All were due to misadventure. They would have been avoided had the victims possessed a simple knowledge of the habit of mine gases.

There was only one accident due to irruption of water, and by it eight persons lost their lives. The accident was due to an error of judgment.

The death rate per thousand persons employed was 0·96, while that of the preceding five years was 1·07. At coal mines only these figures were 0·98 and 1·18 and at mines other than coal 0·90 and 0·73. At coal mines in the United Kingdom during the ten years ending with and including 1919 the average death rate per thousand persons employed underground was 1·46, as compared with 1·74 for Indian coal mines.

The death rate per million tons raised at coal mines was 10·07, while that of the preceding five years was 10·41. At coal mines in the United Kingdom during the ten years ending with and including 1918 the death rate per million tons raised was 5·18.

The substantial decrease in the death rate from accidents is gratifying. It was probably largely due to the lessened intensity of the operation of coal mines consequent on the greatly reduced output.

Deaths occurring in each class of mines were as follows:—172 in coal mines, 17 in mica mines, 14 in silver-lead mines, 8 in wolfram mines, 5 in limestone mines, 3 in manganese mines, 2 in iron mines, 2 in tin mines, 1 in a clay mine, and 1 in a salt mine.

Five persons lost their lives by explosions of gas, 48 by falls of roof, 40 by falls of side, 44 in shafts, 8 by suffocation by gases, 12 by explosives, 8 by irruption of water, 16 by haulage, 11 by other accidents underground, and 33 on the surface.

A list of these accidents appears in Appendix II, Table I. In addition to these there were 33 other accidents causing the death of 37 persons. These also appear in Appendix II, Table I, but are listed separately, reasons being given in each case for their exclusion from the statistical table.

Each fatal accident is described briefly in Appendix II, Table I, but the following are reported at greater length.

Details of certain non-fatal accidents are also given.

EXPLOSION OF FIRE-DAMP.

The Tata Iron and Steel Company, Limited's Malkera coal mine.

*No. 2.** The circumstances attending this accident are somewhat unusual. A miner carrying an open light entered a narrow main gallery in a coal seam and ignited an accumulation of gas. He sustained fatal injuries. The workings were small in extent and were ventilated by a fan, whilst the air current was conducted by brattice to within 57 feet of the face. The face of the gallery was only 210 feet from the shaft and almost immediately above a point in a lower seam where two men were burnt by an ignition of gas in 1917. The accident happened on a Monday morning after a cessation of work of some 27 hours. A sirdar deposed that he examined the gallery with a locked safety lamp some 3½ hours before the explosion took place. If he did so the inspection must have been perfunctory, as there was probably an accumulation of gas at the time. It is possible, however, although unlikely, that deceased, by cutting coal in the face, tapped a blower of gas. There was a recess or cavity, 4″ long × 3¼″ wide × 7″ deep, in the coal face about one foot from the roof. This may have been a natural cavity. It could not have been made with a pick, but might have been the result of a shot. In the face of an adjacent gallery there was a similar cavity which was undoubtedly the back of an exploded shot hole. It was concluded, therefore, that a shot had been fired, but whether it was fired that morning or during the previous shift it was difficult to say. Dynamite was used for coal getting in a lower seam, but in this seam it was only issued for roof ripping purposes, and apparently the management had no knowledge of its use for blasting in the coal.

Only six months before this accident took place two men were killed by an ignition of fire-damp in the same seam at the Company's Choitodih colliery which is adjacent.

After the accident instructions were issued that no lights other than safety lamps should be used in the workings, and that no explosive should be used other than a "permitted" explosive on the British Home Office list.

FALLS OF ROOF.

Messrs. N. M. Chowdhury and Company's Goluckdih coal mine.

*No. 19.** By this accident a coal cutter engaged in cutting floor coal in a gallery, 11 feet in height, was killed by a fall of roof coal. The Inspector who

* The number refers to the number in Appendix II, Table I.

enquired into the circumstances of this fatality considered that if the roof had been properly tested by sounding its insecurity would have been detected. He found that the overman in charge was required to inspect working places occupied by no less than 85 coal cutters and 130 coal carriers, and he considered that it was impossible for the overman to make a thorough examination of so large an area of workings. The supervising staff was subsequently increased.

Mineowners and managers may be reminded that, under Section 14 of the Act, they may be called on to prove that they have done all in their power to prevent non-compliance with the rules. In the draft code of revised rules for coal mines provision has been made for the appointment of an adequate and competent supervising staff.

The Burrakur Coal Company, Limited's Loyabad coal mine.

*No. 23.** In this mine the dangerous operation of extracting small pillars of coal in two seams only 3 feet apart was going on. The danger was enhanced by the fact that the pillars under extraction were situated between two old goaves. The roof overlying the seam was of a strong character and remained standing unsupported over a large area after the coal had been extracted. The effect of this large area of unsupported roof was to throw a heavy "weight" on the small pillars of coal which still awaited extraction. These pillars were severely crushed and began to show signs of collapse, and it was considered advisable to remove the rails and coal tubs from the dangerous area at once. A number of persons under two European overmen were engaged in this work when the crush became greater in severity and finally resulted in collapse. The two overmen were completely buried, but their workmen escaped except for one man who was thrown down and killed near the mine entrance by the severe air blast which resulted from the collapse.

It was considered that the deceased overmen had been over zealous in attempting to save property, and that they had relied too much on their own judgment of the time when collapse would take place. Their commendable action in being the last to retire from the danger zone should, however, not be forgotten, and it is fitting to place on record the fact that they did not shirk the danger and leave their men in the lurch.

The lesson to be learnt from this accident is that when a roof does not break within a reasonable period after the extraction of the pillars and the withdrawal of the timber, it should be regarded as an ever present danger, especially in a mine where the pillars are irregular and of small size.

The Sudamdih Coal Company, Limited's Sudamdih coal mine.

*No. 32.** By this accident two persons were killed and two injured in a quarry. It appears that the dressing or reduction of pillars of coal, 18 feet square and 22 feet high, had been going on at the bottom of a quarry where the coal seam dips at a high angle and is overlain by some 30 feet of overburden, and that the only precaution taken against falls of roof was the setting of three props under the lip of the quarry. The reduction of pillars under such conditions was a highly dangerous operation and should not have been attempted without a plentiful use of timber. No prosecution was instituted in this case as it was stated by witnesses that at the time of the accident the quarry was fenced off, and that no work had been done there for three days owing to insufficiency of timber. As the work had been going on for a few days only and, as came out in the evidence, only three props were available it was a grave error of judgment to commence the work at all.

FALLS OF SIDE.

F. F. Chrestien & Company, Limited's Singho-Buria mica mine.

*No. 54.** By this accident a life was lost in a foolish and reprehensible manner. The deceased was one of a gang of workers engaged in picking out mica from a dump. He had excavated a narrow pit to a considerable depth in loose debris. The sides of the pit collapsed and he was suffocated. The instruc-

* The number refers to the number in Appendix II, Table I.

tions of the mine superintendent were that no small holes were to be excavated in the dump, but that large excavations were to be made with properly sloped sides. Several such excavations, about 30 feet wide, had been made, and these were safe. The deceased, however, was permitted to work in a dangerous place and lost his life. Closer supervision would have prevented the accident.

The Bengal Coal Company, Limited's Parbelia coal mine and The Dhemo Main Collieries, Limited's Dhemo Main coal mine.

*Nos. 62 & 74.** By the first of these two accidents an European overman, and by the second an Indian Assistant Manager were killed by small pieces of stone falling from the sides of deep sinking shafts. The shafts were 1,440 feet and 1,146 feet in depth, respectively.

In the first case a round of shots had been fired two days before the accident, and subsequently an examination of the sides of the shaft which occupied about nine hours had been made. Deceased was at the bottom of the shaft superintending the removal of the broken stone. He and his men were wearing light sheet iron helmets. A piece of stone fell from above, struck his helmet and knocked it off, and before he could recover and replace it upon his head another piece of stone fell and struck him on the bare head, fracturing his skull. This was the third accident of the kind which had occurred during the sinking of this shaft and a companion shaft. The sides of both shafts had given trouble ever since sinking was commenced.

Some sixteen hours prior to the accident and subsequent to the examination of the sides of the shaft a round of shots had been fired in the companion shaft. The shafts are 70 feet apart. Although a daily examination is made of each shaft such examination can only be a cursory one. A thorough examination of each shaft is made only after each round of shots has been fired. It is possible, therefore, that the detonation of the shots fired in the other shaft loosened the stone which caused the accident.

After the accident the agent decided to suspend all development until the shaft sides had been made safe by lining or otherwise.

In the second case the shaft had reached coal, and main galleries were being driven out in the coal seam. Deceased, when in the act of getting into the bucket at the bottom of the shaft, was struck on the head and killed by a piece of stone which fell from the side of the shaft. This was the second accident of the kind to occur at this mine. In neither case was it possible to trace from whence the stone fell. The sides of the shaft were exceptionally well dressed and practically all the shale beds had been secured by rings of walling, but at one point below an upper seam this precaution had not been taken.

Accidents from falls of sides in shafts appear to be increasing in proportion to the depth of the shafts, and it is reasonable to state that it is almost impossible to examine minutely shafts of large dimensions and over one thousand feet in depth. The most careful examination would occupy many hours and even then could not be described as thorough. Shafts of this depth should be lined from top to bottom when the strata passed through is at all doubtful.

In the code of rules for coal mines it is laid down that "where the natural strata are not safe, every working or pumping shaft shall be securely cased, lined or otherwise made secure." In the new draft code of revised rules this rule has been considerably strengthened with a view to avoidance of accidents such as those described above.

IN SHAFTS (ASCENDING AND DESCENDING BY MACHINERY).

The New Beerbhum Coal Company, Limited's Chinchuria coal mine.

*No. 80.** In this case a workman was being lowered in a shaft 400 feet in depth. The cage in which he was descending collided with the ascending cage.

* The number refers to the number in Appendix II, Table I.

He was thrown out and fell to the bottom, being killed instantly. From the fact that there is a clearance of twelve inches at the point where the cages pass in the shaft it was assumed that (1) either the guide ropes were exceptionally slack or (2) that the engineman lowered the cage too suddenly and caused it to swing in the shaft. There were only three guides on each cage, and any undue slackness in the guides or oscillation of the cages would cause the cages to touch. It is probable that the collision would not have occurred if each cage had been fitted with four guides. The loss of life would probably have been avoided if the cages had been fitted with gates.

Many fatalities have occurred in Indian mines by persons falling from cages. In the new draft code of revised rules for coal mines a provision has been included making gates on cages compulsory.

The Burma Corporation, Limited's Bawdwin lead-silver mine.

*No. 81.** This accident caused the largest loss of life by any single accident in an Indian mine during the year. It is illustrated by plan A and plate I.

Ten persons were being lowered in a cage in a vertical shaft, 543 feet deep, when the cage jammed in the wooden guides. The engineman continued to lower the rope, and loose coils of it were paid out on to the top of the cage and projected into the adjacent compartment of the shaft, where they were caught by the ascending cage. The contact was sufficient to release the jammed cage, and it fell to the limit of the slack rope. The resulting jerk broke the clamps of the thimble capping by which the rope was attached to the cage. The cage fell to the shaft bottom, killing all its occupants and another man who happened to be looking up the shaft from an intermediate level. Safety catches were attached to the cage, but they failed to come into action.

In connection with this accident the following points are of importance:—

(1) After the accident a fibre rope, used for slinging timber, was found wrapped round the levers of the safety appliance. It is possible that this rope caused the initial jamming of the cage or prevented the safety appliance from coming into action. Had a proper examination of the cage been made before winding commenced, the presence of the rope would have been detected; and presumably it would have been removed.

(2) The shaft is a blind one and it is sunk from a point in the workings about 100 feet below the natural surface of the ground. The hoist drivers, from their position on the driving platform, could not see the shaft brace. Had they been able to do so they would probably have noticed the slack rope and ceased lowering the cage, thus avoiding the accident.

(3) Only two of the four cagemen were on duty, and they had worked as cagemen for only one month and five days, respectively. The cageman on duty actually noticed the slack rope in the shaft. He failed to realize its significance and did not signal "stop" to the hoistman. He was evidently incompetent to perform his duties.

The cause of the accident is somewhat obscure, but it appears to have been due to a combination of defects any one of which might have caused the accident.

The mine is situated in the Northern Shan States, Burma, where mines have only recently been brought under the Indian Mines Act. A code of rules for such mines has since been drafted and is at present under consideration.

IN SHAFTS (FALLING INTO THE SHAFT FROM THE SURFACE).

Villiers Limited's Pandaveswar coal mine.

*No. 84.** By this accident a hookman at the top of a sinking shaft lost his life. It was the first time that he had acted in the capacity of hookman. At the

* The number refers to the number in Appendix II, Table I.

time of the accident the sinking trolley had been pushed over the shaft, and deceased was standing on it and engaged in landing a bucket which had been raised from the shaft. He was unskilful in performing this work, and the bucket struck the back of the trolley and pushed it forward, leaving an opening between it and the side of the shaft. Deceased, in attempting to recover his balance, stepped backwards and fell down the shaft. After the accident stops were fitted on the rails to prevent the trolley from being pushed forward so as to uncover the shaft.

The over-elaboration of codes of rules is to be deprecated, but it is a matter for consideration whether a rule for the prevention of accidents of this kind should not be included in the revised code of rules which has been drafted.

IN SHAFTS (FALLING FROM PART OF THE WAY DOWN).

The Burma Corporation, Limited's Bawdwin lead-silver mine.

*No. 87.** In this case a miner, carrying a shovel in one hand and a candle lantern in the other, was climbing a ladderway underground. He fell from an upper ladder through an opening in an intermediate platform to the foot of a lower ladder, and was killed.

Carrying tools on ladders is permitted at the mines. It is dangerous both to the climber, who requires the use of his hands, and to those who may be climbing a lower ladder, and on whom a dropped tool may fall.

Openings in platforms should be behind the upper ladder and not to one side, as in this case.

These defects have been dealt with in the draft code of rules for mines in the Northern Shan States.

IN SHAFTS (THINGS FALLING FROM THE SURFACE).

The Tata Iron and Steel Company, Limited's Purusathampur coal mine.

*No. 89.** At the time when this accident occurred eighteen persons were at work at the bottom of a sinking shaft, 270 feet in depth. A bucket of debris had been raised from the shaft, and by means of a short chain it was swung out towards the tipping shoot. The catches were opened for the bucket to be emptied. Before it was emptied, however, the winding engineman raised the bucket, and, as the catches were open, the contents of the bucket were tipped into the shaft. It is somewhat remarkable that of the eighteen men at work at the bottom of the shaft all except one, who was killed, escaped injury.

The engineman deposed that he received a signal to raise the bucket. The banksman on the other hand denied that he gave any such signal. The fact of the debris falling into the shaft, however, proves that the trolley had not been pushed completely over the shaft. Proceedings were instituted against the banksman for violation of Special Rules 3 and 5, and he was convicted and punished as detailed on page 18 under "Prosecutions."

The arrangement for handling debris at the top of this shaft, although a fairly common one in the coalfields, leaves much to be desired. The bucket on arrival at the surface should either be lowered on to a subsidiary trolley, which can then be pushed clear of and well away from the shaft before it is emptied, or otherwise sloping sinking doors should be provided.

The Burrakur Coal Company, Limited's North Mudidih coal mine.

*No. 90.** An over-wind took place at a sinking shaft. The impact of the bucket dislodged a steel girder which was insufficiently secured in the headgear. The girder fell and killed one of seven men at the bottom of the shaft.

Investigation of this accident disclosed great laxity in the arrangements for the appointment of winding enginemen. It was the first shift that the wind-

* The number refers to the number in Appendix II, Table I.

ing engineman concerned had worked the engine. He was grossly incompetent and should not have been permitted to handle the engine.

The manager, being fully acquainted, both by personal inspection and by reports from the engineer and fitter, with the unskilful manner in which the girders were secured, should not have permitted persons to work or to be lowered and raised in the shaft. The facts were explained to the District Magistrate, but he did not consider that the defects referred to above involved any clear breach of the law. Proceedings were, however, instituted against the manager for failure to fence the top of the shaft properly, and to appoint a winding engineman, and he was convicted as detailed on page 16.

IN SHAFTS (MISCELLANEOUS).

The Gopalichuck Coal Company, Limited's Gopalichuck West coal mine.

*No. 103.** A pump minder was lowered down a shaft, 365 feet deep, in a bucket to adjust a pump sling in the shaft. The shaft was unventilated, hot and steamy. He was overcome by the heat, dropped into the water, and was drowned. Shortly after the accident a temperature of 110° F. was registered in the shaft. Such a temperature in a saturated atmosphere is beyond endurance, and no man should have been required to work under such conditions. After the accident the steam pump was replaced by an electric pump.

It would be possible to introduce rules limiting the temperature allowable in working places, but emergencies arise in mining and it has not been thought advisable in other countries to regulate this matter by rule.

SUFFOCATION BY GASES.

Mr. C. J. Smith's Bagdiggi coal mine.

*No. 107.** By this accident an earth cutter was asphyxiated at the bottom of an old shaft which was being cleaned out. Mention may be made of the heroic effort made by a sirdar, named Amoo Mia, to save the life of the deceased. He descended four times into the foul atmosphere and eventually brought deceased to the surface, but unfortunately too late to save his life. For this gallant action he has been recommended for an award of the Edward medal, second class.

BY EXPLOSIVES.

The Raneegunge Coal Association, Limited's Alkusa South coal mine and The Tata Iron and Steel Company, Limited's Jamadoba (No. 1 Division) coal mine.

*Nos. 114** *and 120.*† Both these accidents were caused by inadvertent explosions of country gunpowder which had been spread out to dry. In the first case three persons were killed and three injured, and in the second a small child lost his life.

In former Annual Reports attention has been drawn to the haphazard manner in which country gunpowder is manufactured and stored on the surface. The regulation of such matters comes under the Indian Explosives Act, as rules for the use of explosives in mines take effect only after the explosive has actually been taken inside a mine. As no action has been taken under the Explosives Act in these and other similar cases, it appears that no contravention of the Indian Explosives Act is involved. The Agent of the two collieries referred to above, however, is fully alive to the danger and he proposed to introduce improvements as follows:—

(1) to arrange for the manufacture of all loose gunpowder into cartridges before issue.

* The number refers to the number in Appendix II, Table I.
† See page 69.

(2) to build a sub-magazine at each mine, and to place a responsible man in charge of it.

(3) to require all gunpowder after issue to be stored in the sub-magazine until such time as it is taken underground.

(4) to require all unused gunpowder to be returned to the sub-magazine as soon as it is brought out of the mine.

The enforcement of these rules would prevent accidents of this kind, and it is to be hoped that they or similar rules will be adopted at other mines where country gunpowder is used.

The New Beerbhum Coal Company, Limited's Victoria coal mine.

(Non-fatal accident.)

In this case a stone cutter was drilling a shot hole at the bottom of a sinking shaft. His drill came into contact with the unexploded charge of a misfired shot. The charge exploded and he was seriously injured. The explosive used was gelignite fired electrically, and the shots were fired in series. Low tension detonators were being used. These are never satisfactory for exploding charges connected in series and fired simultaneously, as if any one fuse is more sensitive than the others it will explode first, break the circuit and leave the other charge or charges unexploded. As it was considered that this was the cause of the misfire in this instance, the use of low tension detonators was discontinued and orders given for high tension detonators only to be used in future.

IRRUPTION OF WATER.

The Burma Corporation, Limited's Namma Coal Mine.

*No. 117.** This accident took place in a steeply inclined shaft situated in a ravine in hilly ground. During heavy rain an irruption of water took place *vid* an abandoned tunnel which connected with the shaft near the surface. Eight persons who were in the shaft at the time were drowned. The circumstances of this accident are illustrated by plan B.

The danger of an irruption of water was foreseen, and a dam had been built in the tunnel. This dam was 6 feet high and 8 feet wide, and constructed of some seven or eight round timbers, 8″ diameter and 6″ apart, set vertically in grooves, 12″ deep, in the coal roof and floor of the tunnel. These were backed by flush jointed planks, 8″ wide and 2″ thick, also set in grooves, 12″ deep, in the coal sides of the tunnel. Behind this timber frame the tunnel was filled with rammed clay to a distance of 10 feet, and between this and the entrance, a distance of 40 feet, the tunnel was filled with clay.

During a rain storm of unusual severity the surface drains became choked by the slipping of the hill sides, and the ground above the mouth of the tunnel became inundated. The timber dam and filling were carried away, and the shaft was filled with water (500,000 gallons) to the surface within 15 minutes.

The manager had relied on the clay filling keeping back the water, and did not anticipate that the full hydrostatic head would take effect. He did not look upon the timber frame as a dam, but merely as a retaining medium for the filling. In the event, however, the filling probably became so completely saturated as to communicate the full hydrostatic head to the timber dam. The vertical height of water was ordinarily 35 feet, and probably it was no less than 40 feet at the time of the accident. The pressure on the dam would, therefore, be 16 lbs. per square inch, or a total pressure of 50 tons. Owing to the greater specific gravity of the mixture of clay and water, the pressure on the dam was probably much greater, perhaps 80 or 100 tons. Such a pressure it was not intended to stand and would be unable to bear. It, therefore, collapsed.

* The number refers to the number in Appendix II, Table I.

Although this accident must be classed as due to "fault of management", it does not appear that the manager can be blamed for more than an error of judgment.

Since the accident two substantial dams, 5 feet thick, have been built in the tunnel. These are recessed 4 feet into the roof and floor, and 6 to 8 feet into the sides. They are constructed of concrete reinforced by steel rails. The space above the dams has been filled into the surface. No further danger of inundation *viâ* this tunnel need be feared. Work in the shaft has been suspended, and before it is resumed the collar of the shaft will be protected by a reinforced concrete wall.

SURFACE BOILERS OR PIPES BURSTING.

The Samla-Kendra Collieries, Limited's Kendra coal mine.

*No. 146.** In this case a blacksmith, who was assisting to caulk a joint in a range of pipes containing steam under pressure, was killed by the blowing out of a bend pipe. The steam pressure was 100 lbs. per square inch. The assistant-fitter, who was responsible for the failure to shut off the pressure, was fined one month's salary.

The steam range was six inches in diameter, and the bend pipe which blew out had screwed joints. It is preferable where large pipes are subjected to a high steam pressure to connect them by suitable flanged joints. Screwed joints corrode and are always a source of danger. After the accident flanged joints were fitted to the steam range.

MISCELLANEOUS ON SURFACE.

Messrs. D. N. Ghosh and Brothers' Dharmaband coal mine.

No. 3 on page 68. By this accident a child, whilst at play, fell into an unfenced boiler feed tank, 4 feet deep, and was drowned. In previous Annual Reports attention has frequently been drawn to this class of accident, which is clearly avoidable. In June 1918 the attention of the Agent of this mine was drawn to the danger of insufficiently fenced boiler tanks at a neighbouring colliery under his control. Three months later he was again reminded of the danger. The occurrence of this accident proves that he had not realized the importance of the matter. Subsequent to this accident, all boiler feed tanks at mines under his control were fenced, and unused tanks were filled up. Provision for the fencing of such tanks has been included in the draft codes of revised rules.

The Great Indian Peninsular Railway Company's Kargali coal mine.

*No. 158.** A coal cutter was getting coal with a hammer and wedge in a quarry. A small piece of the top of the wedge flew off and struck him on the leg, severing the femoral artery. He died from loss of blood within half an hour. A large number of persons were at work in the quarry, but no one knew how to stop the bleeding. Prompt aid would have saved this life.

Some years ago, under the auspices of the St. John Ambulance Association, classes in "First Aid" were held in the coalfields, and a large number of persons became qualified to render first aid to the injured. Owing to preoccupation caused by the war, the movement languished, and nothing has been done for several years. Funds are, however, still in hand and, now that the Honorary Secretary and Treasurer (Mr. G. C. Leach) has returned from England, it is hoped that the beneficent activities of the Association will be resumed.

* The number refers to the number in Appendix II, Table I.

The New Kessurgurah Coal Company, Limited's New Kessurgurah coal mine.

No. 18 on page 69. In this case a child went to a well and, whilst drawing water therefrom, overbalanced, fell in and was drowned. The well is only 10 feet deep. It is brick lined, and the walling is carried up to a height of two feet above the ground level. There was no appliance for raising the bucket, and persons were accustomed to stand on the walling whilst drawing water.

Fatalities of this class are only too common in the coalfields. They could be avoided if the tops of wells were properly protected and appliances for raising water provided. In plan C drawings of such an arrangement are given. The well curb illustrated is designed in accordance with sanitary principles. No waste or contaminated water can flow directly back into the well. A cemented drain leads such water to a distance of at least 25 feet from the well. The illustration is an approved type plan which was issued by the Jharia Mines Board of Health some time ago. Had the well in this case been provided with such a curb it would have been impossible for anyone to fall into the water. After the accident a curb of approved type was provided at this well.

Section IV.—Prosecutions and Additions to the Act.

Prosecutions.

Judgment was given in the following prosecutions during the year. Unless otherwise stated "rule" means a rule under Notification No. 864-6.—20, dated the 10th March 1904, being rules for the working of coal mines.

The agent and manager of the East Bagdiggi Colliery Company's East Bagdiggi coal mine were prosecuted under Rule 3 for not keeping the sides of working places secure. The agent was fined Rs. 200, in default one month's simple imprisonment. The manager was acquitted.

The manager, under-manager and sirdar of Babu J. R. Agarwalla's Sudreadih coal mine were prosecuted as follows :—

The manager, under Rule 3, for not keeping the sides of the working places secure. He was fined Rs. 10, in default one day's simple imprisonment. The manager was further convicted for a breach of Special Rule 27 for failing to have had working places inspected by properly appointed subordinates. He was fined Re. 1, in default one day's simple imprisonment.

The under-manager was fined Rs. 5 or in default one day's simple imprisonment for a breach of Rule 3, and the sirdar was fined Re. 1 in default one day's simple imprisonment for a breach of special Rule 4.

The agent, manager and surveyor of Babu B. B. Trigunait's Khas Angarpathra colliery were prosecuted for not having maintained accurate plans of the underground workings of the colliery. A subsidence which seriously endangered the stability of the District Board road took place. The subsidence was due to the excessive robbing of pillars in the mine. Enquiry showed that the plans of the workings did not show the extent to which the pillars had been robbed. The case against the Agent was not pressed and he was acquitted. The manager and the surveyor were convicted and sentenced to pay fines of Rs. 60 and Rs. 25, respectively, in default one week's simple imprisonment. In delivering judgment the Magistrate said :—

"Clearly if a manager orders a surveyor to make a survey, and the survey subsequently proves inaccurate in detail which the manager cannot be expected to notice, the fault is the surveyor's. Conversely the manager might be solely responsible if he failed or refused to give the surveyor any facilities for survey. In this case the plan is so plainly inaccurate that any care or consideration on the part of either the manager or surveyor might have made them realize its inaccuracy. * * * * *."

* * * * * * *

"I would further remark that any inaccuracy may be a mere inaccuracy or it may have serious consequence. Remedial measures have had to be ordered to save the District Board road, and it might apparently have collapsed. Had an accurate survey been made the necessity for such measures would have been foreseen instead of being left till now."

The manager of the Burrakur Coal Company, Limited's North Mudidih coal mine was prosecuted under Rule 19 read with Special Rule 22 for not properly fencing the top of a shaft, and for permitting an engine man to be in charge of a winding engine who had not been appointed by him in writing. He was fined Rs. 25 and Rs. 50, respectively, on each count, in default one day's simple imprisonment.

The late owners of Messrs. Tejpal Bose and Company's Khas Tundu coal mine were prosecuted under Rule 12 for failure to submit a plan of the abandoned workings of the mine in due time. They were fined Rs. 10.

The owner and manager of the Angarpatra Coal Syndicate's Kesalpur coal mine were prosecuted under Rule 47 of Notification No. 2968-82, dated the 21st April 1906, the former for not appointing a duly qualified manager, and the latter for acting as manager of the mine without a 'permit.' They were fined Rs. 15 each, in default one day's simple imprisonment.

The owner of Adam Jusab's Kapasara coal mine was prosecuted under Rules 1 and 3 for permitting persons to work in a mine in which there was no second outlet, and for not keeping working places secure. He was fined Rs. 25.

The owner of Adam Jusab's Kapasara coal mine was prosecuted under Rules 3 and 19 for employing women in the mine in disobedience of an order issued to him under Section 15(2) of the Act. He was fined Rs. 25.

The owners (three) and manager of W. C. Bhattacharji and Company's Egarcoor coal mine were prosecuted under Rule 19 for not securely fencing the quarry and incline of the mine. The owners were fined Rs. 50 each and the manager Rs. 25, in default two weeks' simple imprisonment.

The owners (two) of Messrs. Sashi Bhusan Haldar and Rakhal Das Chatterji's Pathlia mica mine were prosecuted for not submitting a notice of discontinuance of the mine. They were fined Rs. 5 each.

The owner and agent of Messrs. Gopi Chand Seth and Deoki Nandan Seth's Meru mica mine were prosecuted, under Rule 4 of Notification No. 11793—103, dated the 30th December 1908, and Rules 3 and 19 of Notification No. 6436—152, dated the 2nd September 1911, for failure to report the change in the name of the owner and manager of the mine, for not recording reports of the daily inspections of the mine, and for not keeping the sides of the quarry secure. They were fined Rs. 25 each, in default one week's rigorous imprisonment. They had already paid Rs. 200 as compensation to relatives of persons killed by a fall of ground.

The manager of Babu B. N. Sanyal's Bharatchack coal mine was prosecuted, under Rule 7, for not fencing entrances to discontinued galleries in the mine. He was fined Rs. 50.

The owner of the Jalota Lachipur Coal Company's Lachipur coal mine was prosecuted under Rules 3, 7 and 19, for not keeping working places in the mine secure, not fencing entrances to the mine, and disregarding an order issued to him under Section 15(2) of the Act. He was fined Rs. 25.

The owner of Babu S. C. Mittra's North Muslia coal mine was prosecuted under Rule 7, for not fencing inclines and shafts at the mine. As the mine was under attachment pending decision of possession it was not possible to fix responsibility on any one. The accused was accordingly acquitted.

Twenty-six prosecutions were instituted for non-submission of Annual Returns for the year 1919 on the prescribed date. Six cases were subsequently withdrawn and in three cases the accused were acquitted. In the other seventeen cases fines, aggregating Rs. 941, were imposed.

Babu Dhirendra Nath Roy and Mr. J. V. Maughan, late owners of Ramkanali colliery, were prosecuted for failure to submit an Annual Return for the period during which they worked the colliery, *i.e.*, from January 1st to August 27th, 1919, when they transferred the colliery to a new owner. They were acquitted as it was held that the Annual Return should be submitted by the person who is the owner of the mine at the time when the Annual Return falls due, *i.e.*, at the end of the year, and not by a person who was owner at

some past date during the year. In the course of his judgment the Magistrate said:—

> "It is not ordinarily the duty of a Court to say what rules should be, but, as this is a test case, I will briefly indicate my views. If any value attaches to these returns it is clearly desirable that the Department of Mines should be able to obtain the complete statistics for the year. As pointed out above when a mine is transferred in the middle of the year there is no rule to compel him (an owner) to submit a return then. I have held that he cannot be made to put in an Annual Return when he has ceased to be an owner. From the strictly legal point of view I believe that the present owner could be held responsible for putting in a complete and accurate return for the whole year, but it would clearly be unfair to require him to put in a return for the period prior to the date on which he took over the mine when he might not be in possession of the necessary books and registers to compile such a return. There is thus a real danger that a complete return will not be submitted. In my opinion what is plainly required is a rule making it imperative that an owner who transfers his property should, at the time of transfer, put in a return on the lines of the Annual Return giving the figures for that period of the year during which he was the owner, and a proviso in the present rule to the effect that when an owner has come into possession of a mine during the year for which the Annual Return is due, he shall be held responsible for putting in the return only for the period subsequent to transfer."

In the draft codes of revised rules for coal mines and for mines other than coal mines rules have been inserted on the lines suggested by the Magistrate in this case.

Information was received of the following prosecutions instituted by colliery managers against their subordinates under the Special Rules made under Section 21 of the Act:—

The manager of the Damaghuria Coal Company, Limited's, Damaghuria coal mine prosecuted a pointsman, under Rule 95, for not giving the necessary warning while shunting operations were in progress. The case was filed as accused was not traceable.

The manager of the Sibpur Coal Company, Limited's Pretoria coal mine prosecuted a fitter, under Rule 4, for absenting himself from duty without permission. He was fined Rs. 3, in default 3 days' simple imprisonment.

The manager of the Sibpur Coal Company, Limited's Pretoria coal mine prosecuted a mistri, under Rule 4, for absenting himself from duty without permission. He was fined Rs. 3, in default 3 days' simple imprisonment.

The manager of the Upper Pench Coal Company Limited's Jatachapa coal mine prosecuted a sirdar, under Rules 3 and 5, for failure to comply with orders issued by him in respect of precautions to be taken when persons are ascending or descending the shaft. He was fined Rs. 12, in default one month's rigorous imprisonment.

The manager of the Bengal Coal Company, Limited's Parbelia coal mine prosecuted a winding engineman, under Rule 62, for leaving the handles of the brake while the engine was in motion and while persons were suspended in a bucket by the rope attached to the engine. Accused was convicted, under Section 304-A, Indian Penal Code, and sentenced to four months' rigorous imprisonment.

The manager of the Burrakur Coal Company, Limited's Latchipur coal mine prosecuted an engineman, under Rule 60, for permitting an unauthorised person to interfere with the engine of which he was in charge. He was fined Re. 1, in default one day's simple imprisonment.

The manager of the Tata Iron and Steel Company, Limited's, Purshottampur coal mine prosecuted a hookman under Rules 3 and 5, for not complying with an order of the manager to keep the

mouth of the shaft closed. He was fined Rs. 50, in default two weeks' simple imprisonment.

The manager of the Central Kurkend Coal Company, Limited's Central Kurkend coal mine prosecuted an onsetter, under Rule 78, for failure to see that the tubs about to descend the mine were properly coupled. He was fined Rs. 25, in default two weeks' rigorous imprisonment.

ADDITIONS TO THE ACT.

The Government of India cancelled General Rules 38, 39 and 40, and amended Rule 29 relating to the grant of certificates of service to managers of coal mines, and extended to all mines the application of the rule which requires that a copy of the rules made under Section 20 of the Act shall be kept at every mine.

Rules 45, 46 and 47 of the rules applying to coal mines were amended so as to permit a manager holding a second class certificate to manage a mine the average output of which does not exceed 2,500 tons per month. The Government Notifications under reference are reproduced in Appendix IV, Statement Nos. 7 and 8.

During the year Special Rules, under Section 21 of the Act, were established at 22 coal mines. Special Rules have now been established at 561 coal mines and 39 manganese mines.

Section V.—General Remarks.

HEALTH AND SANITATION.

The Asansol Mines Board of Health held nine ordinary meetings and five special meetings during the year.

Dr. J. W. Tomb was Chief Sanitary Officer throughout the whole period.

There were 368 cases of cholera with 170 deaths, and 795 cases of small-pox with 65 deaths, as compared with 3,511 cases of cholera with 1,863 deaths, and 200 cases of small-pox with 14 deaths in 1919. The number of deaths from influenza was 748, as against 2,024 during the previous year.

The investigation into the existence of hook-worm disease was discontinued by the Board early in February 1920, and the work taken up by Government under the supervision of the Chief Sanitary Officer. The percentage of infection amongst mining labour was found to be 69·90. The underground water of 79 pits and inclines in 29 collieries was examined for living larvae, and of these pits 75 were found to be infective. With a view to the prevention of hook-worm infection the Chief Sanitary Officer intends to submit to the Board proposals for the provision of underground latrines in coal mines.

Anti-malarial investigations were systematically conducted throughout the the year, and in the case of collections of water within a radius of a quarter of a mile of each village or colliery found to be infested with malaria bearing mosquitoes, representations were made to the owners with a view to such collections being drained or cleansed of weeds. The response was not satisfactory. The public has not yet begun to appreciate the value of anti-malarial works, and at present there is no legislation to enable the Board to do such work itself or compel owners to do it.

Lectures on sanitation and hygiene in the village schools of the Settlement were continued, and the Board's newly issued primer on "Elementary Hygiene" was distributed to the scholars, free of charge.

The Jharia Mines Board of Health held sixteen ordinary meetings and six special meetings.

Dr. G. W. Thompson was Medical Officer of Health during the whole period.

The Epidemic Diseases Act remained in force throughout the year, and the Medical Officer of Health continued to be the authority appointed under the Act.

The new Bihar and Orissa Mining Settlements Act became law in August, but up to the end of the year the Local Government had not prescribed the rules or approved the bye-laws under the Act.

There were 191 cases of cholera with 58 deaths and 1,363 cases of small-pox with 75 deaths, as compared with 4,006 cases of cholera with 2,124 deaths and 911 cases of small-pox with 47 deaths in the previous year. The general health of the mining community was good.

The rainfall in the Jharia coalfield was 44·91 inches, in the Giridih coalfield 49·13 inches, in the Raniganj coalfield 44·55 inches, and at the New Jharia Water Works near Topchanchi it was 61·32 inches, the figures for the previous year being 47·85, 68·49, 47·90 and 72·50 inches, respectively.

MINING EDUCATION.

The Principal of the Bengal Engineering College has reported that in the examination for the Diploma in the principles of mining held in March, of the fourteen students who entered the senior course ten were granted Diplomas; in the junior course twenty-seven were enrolled at the beginning of the session, twenty-one sat for examination, and fourteen qualified for promotion to the senior course. There was one special student. Twenty-six students entered the preliminary or preparatory class on the mining side, of whom sixteen were promoted.

The annual mining camp was pitched at Dishergarh on a site near the Equitable Coal Company's office. The usual courses of practical work were undertaken and visits of inspection paid to various plants and appliances of technical interest in the vicinity. The total number of students in the camp was 39, of whom 8 were special survey students.

The Mining Education Advisory Board held two meetings during the year. As a result of the sessional examination of the students of the Evening Mining classes in the coalfields, special mining scholarships, tenable at the Bengal Engineering College, were awarded to Babus Indo Bhusan Bhattacharjee and Dinanath Das, who joined in April 1920. The vacancy in the post of whole time Mining Instructor led to the creation of four temporary appointments. Mr. James McArthur was appointed as mining lecturer in Bihar and Orissa, and in Bengal three lecturers were appointed at different centres, *i.e.*, Mr. James Wilson at Dishergarh, Mr. David Jones at Raniganj, and Mr. P. W. Woodhead at Jamuria.

The sessional examination was held in May, the examiners being Messrs. H. Lancaster, Inspector of Mines in India, and E. H. Roberton, Professor of Mining, Bengal Engineering College. Of the 168 candidates who qualified to sit for examination, 63 candidates presented themselves for examination and 34 were successful.

Babus Rash Behari Mondal and Bhupendra Kumar Bose were appointed as mining lecturers in Bengali and Hindi, respectively, and delivered the usual courses of lectures in the Raniganj and Jharia coalfields.

In extension of a scheme, initiated by the late Sir William Allen Ironside on behalf of Messrs. Bird & Company, for training European and Anglo-Indian boys in mechanical engineering and in the manufacture of refractories at Kumardhubi in the Raniganj coalfield, a hostel to accommodate sixteen apprentices to be trained in mining engineering was opened by the firm at Sijua in the Jharia coalfield in March 1920. The apprenticeship covers a period of five years during which the boys are given a thorough practical and theoretical training in all branches of coal mining engineering. Candidates for apprenticeship must have passed an examination equivalent to the Sixth Standard or Junior Cambridge Local, and must have an elementary knowledge of mathematics, drawing, physics and chemistry. They must not be less than 17 or more than 19 years of age. No premium is required, and

pocket money is given on a scale rising to Rs. 100 per month in the fifth year. Apprentices who have done well will be encouraged to prosecute their studies in England at the Firm's expense.

BOARD OF EXAMINERS FOR COAL MINE MANAGERS' CERTIFICATES.

The following changes occurred in the personnel of the Board :—Mr. R. R. Simpson, officiated as President from the 1st May 1920, the date on which Mr. G. F. Adams proceeded on furlough out of India. Mr. G. C. Leach resigned on the 14th May 1920. He was succeeded by Mr. J. B. Wardlaw.

Six meetings were held during the year.

Thirty-one first class and one second class certificates of competency were granted in lieu of English certificates, and three first class and three second class certificates of service were granted during the year.

At the examinations for colliery managers' certificates of competency held at Dhanbad on the 16th, 17th, 18th and 23rd, 24th and 25th February 1920, sixty-three candidates sat for first class and one hundred and forty-seven for second class certificates. Certificates of competency were granted to seven first class and twenty-three second class candidates.

The examiners for the first class examination were Messrs. J. B. Wardlaw, J. Mackie and R. R. Simpson, Inspector of Mines in India, No. 1 Circle (official Examiner and Secretary), and for the second class examination Messrs. L. A. Jacobs, R. Heron and H. Lancaster, Inspector of Mines in India, No. 2 Circle (official Examiner and Secretary).

MINING BOARDS IN BENGAL AND BIHAR AND ORISSA AND THE CENTRAL PROVINCES.

The Bengal Mining Board held no meetings during the year. The questions of the cancellation of Rules 38, 39 and 40 and the amendment of Rule 29 of the General Rules for coal mines, an addition to the rules applicable to all mines in British India, additions and amendments to rules under the Indian Explosives Act, proposals for the limitation of the hours of mine workers, and amendments of the rules framed under the Bengal Mining Settlements Act were considered by circulation to members of the Board.

The non-official members were Messrs. W. Graham and Glen George.

The Bihar and Orissa Mining Board held no meetings during the year. The question of amendments of the rules issued under the Mining Settlements Act was considered by circulation to members of the Board.

The non-official members were Messrs. R. G. M. Bathgate and J. Mackie.

The Central Provinces Mining Board held no meetings during the year. The non-official members were Messrs. H. D. Coggan and R. S. Davies.

MINING AND GEOLOGICAL INSTITUTE OF INDIA.

The total membership at the end of the year, including subscribers, was 302. In addition to the annual meeting, three ordinary meetings were held at which papers were read and discussed. A visit was paid to a coal mine, and there was a geological field excursion. Two parts of the Transactions were published. The geological map of the Jharia coalfield, which is the outcome of the work of the Jharia Map Committee, was published. The map is complete in eight sheets on a scale of 4" to the mile. The price is Rs. 36 per set or Rs. 6 per single sheet.

The Subsidence Committee continued its observations during the year.

The Government prize for the best paper contributed during the year was divided equally between Messrs. E. H. Roberton and H. M. Tarlton for their papers entitled "Proposed method of working a highly inclined thick seam of coal" and "Hydraulic packing in thick coal seams," respectively. To these two authors the Institute's gold and silver medals were awarded. The bronze

medal was awarded to Mr. R. R. Simpson for his paper entitled "Accidents in Indian mines, and mining legislation."

THE ASSOCIATION OF COLLIERY MANAGERS IN INDIA.

The membership of the Association increased from 200 to 222. During the year the Council was engaged with questions relating to affiliation with the National Association of Colliery Managers in Great Britain, regulation of grog shops, receivers of stolen property, certificates of mining sirdars and surveyors, second class certificates of competency, unrest in the coalfields, the Bengal Mining Settlements Act, the Auxiliary Force, and other matters.

LAND ACQUISITION (MINES) ACT, 1885.

The number of original cases disposed of altogether at the end of 1920 stood at 412, thirty-one of which were cases disposed of during the year.

OFFICIAL DUTIES, 1920.

Mr. G. F. Adams, C.B.E., was Chief Inspector of Mines. From 1st May he took combined leave for 18 months, *i.e.*, privilege leave for 5 months and 27 days and the remaining period on furlough.

Mr. R. R. Simpson was Inspector of Mines, No. 1 Circle, from 1st January to 30th April. He took over charge of the office of the Chief Inspector of Mines from 1st May and officiated as Chief Inspector up to the end of the year.

Mr. H. Lancaster was Inspector of Mines, No. 2 Circle. In addition he had charge of No. 1 Circle from 1st to 14th May.

Mr. F. L. G. Simpson was a temporary Inspector of Mines throughout the year. He held charge of No. 1 Circle from 14th May until 31st December. He was granted privilege leave for one month from the 15th April to 14th May.

Mr. J. H. Lang was a Junior Inspector of Mines throughout the year.

Messrs. J. G. Harding and W. H. Goldsworthy were appointed Junior Inspectors of Mines on 28th January and 4th April, respectively.

I have the honour to be,

SIR,

Your most obedient Servant,

R. R. SIMPSON,

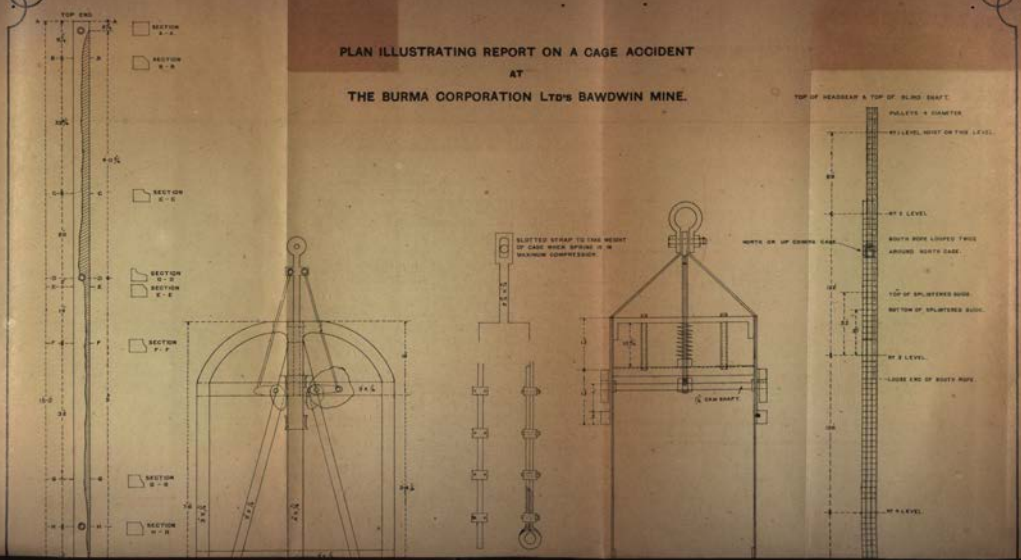
Chief Inspector of Mines in India.

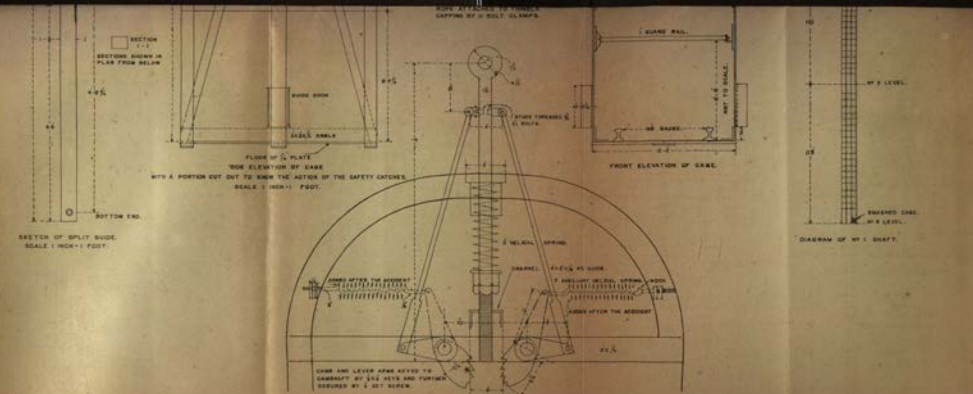
PLAN A

PLAN ILLUSTRATING REPORT ON A CAGE ACCIDENT

AT

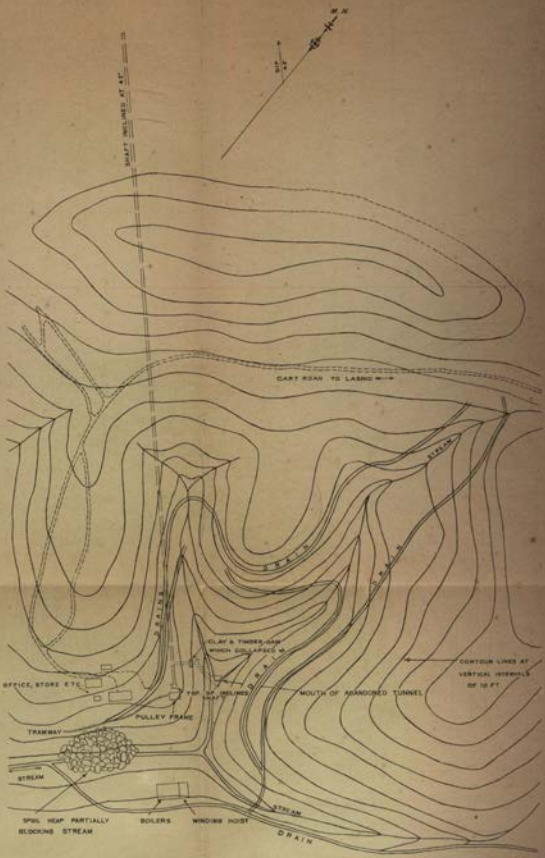
THE BURMA CORPORATION LTD'S BAWDWIN MINE.




SECTION
SECTIONS SHEWN IN PLAN FROM BELOW
BOTTOM END.
SKETCH OF SPLIT GUIDE.
SCALE 1 INCH = 1 FOOT.
GUIDE BOOK
FLOOR OF ¼ PLATE
SIDE ELEVATION OF CAGE
WITH A PORTION CUT OUT TO SHEW THE ACTION OF THE SAFETY CATCHES.
SCALE 1 INCH = 1 FOOT.
SIDE ATTACHED TO TIMBER CAPPING BY U-BOLT CLAMPS.
GUARD RAIL.
GUIDE.
FRONT ELEVATION OF CAGE.
WT 9 LEVEL.
SMASHED CAGE. WT 9 LEVEL.
DIAGRAM OF WT 1 SHAFT.
HELICAL SPRING.
ARMS AFTER THE ACCIDENT
CAMS AND LEVER ARMS KEYED TO CATCH SHAFT BY 1½ SQ KEYS AND FURTHER SECURED BY 1 SET SCREW.
SKETCH SHOWING DETAIL AND MECHANISM OF SAFETY CATCHES.
SCALE 2 INCHES = 1 FOOT.

PLAN ILLUSTRATING REPORT ON
FATAL ACCIDENT BY IRRUPTION OF WATER
AT
MESSRS. THE BURMA CORPORATION LTD'S. NAMMA COAL MINE

Scale 1 Inch = 100 Feet.

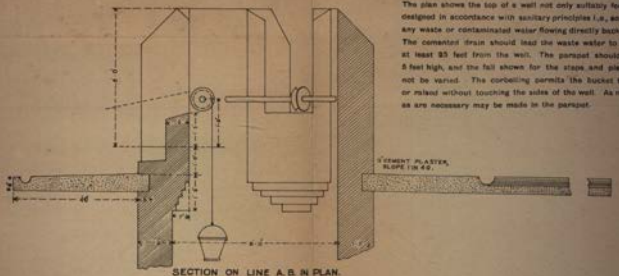


PARAMAN SPINK & CO. CALCUTTA

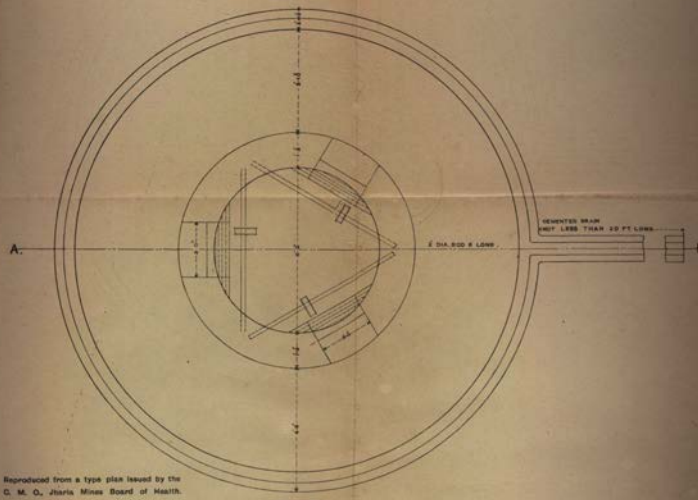
PLAN OF A WELL CURB WHICH FORMS A SATISFACTORY FENCE, PROVIDES A MEANS OF RAISING WATER AND PREVENTS WASTE WATER FROM FLOWING BACK INTO THE WELL.

Scale 1 Inch = 2 Feet.

The plan shows the top of a well not only suitably fenced but also designed in accordance with sanitary principles i.e., so as to prevent any waste or contaminated water flowing directly back into the well. The cemented drain should lead the waste water to a distance of at least 25 feet from the well. The parapet should be at least 3 feet high, and the fall shown for the steps and platform should not be varied. The corbelling permits the bucket to be lowered or raised without touching the sides of the well. As many openings as are necessary may be made in the parapet.



SECTION ON LINE A. B. IN PLAN.



PLAN.

Reproduced from a type plan issued by the C. M. O., Jharia Mines Board of Health.

PLATE ILLUSTRATING REPORT ON CAGE ACCIDENT AT THE BURMA CORPORATION LTD'S BAWDWIN MINE.

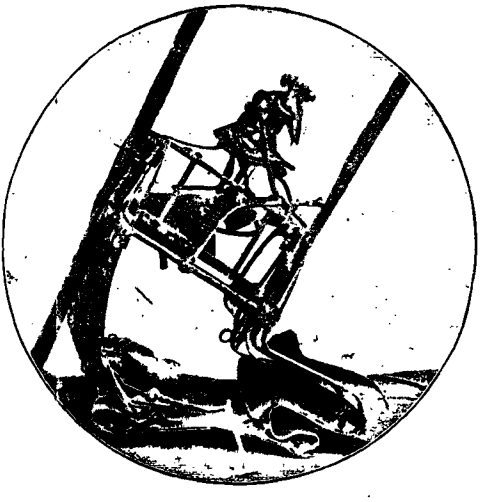


Photo of wrecked cage, showing wooden guides, safety appliance, and fibre rope which had been used for slinging timber sent underground. The shaft attendants had failed to remove the rope.

APPENDIX I.

STATISTICS OF MINES AND MINERALS.

Table No. 1.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1920.

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above Ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
							A.—COAL.									
							Tons.									
Assam	Lakhimpur	6	4	2	6	11	285,974	1,634	176	...	1,810	630	217	68	915	2,725
	Naga Hills	1	...	1	1	1	38,991	205	1	2	208	189	17	5	211	419
	Total	7	4	3	7	12	324,965	1,839	177	2	2,018	819	234	73	1,126	3,144
Baluchistan	Quetta-Pishin	7	...	7	...	...	5,137	50	...	...	50	36	...	...	36	86
	Sibi-Khost	7	1	6	...	...	22,535	420	...	...	420	343	...	16	359	779
	Total	14	1	13	...	...	27,672	470	...	...	470	379	...	16	395	865
Bengal	Bankura, Raniganj	2	...	2	...	...	7,711	33	25	...	58	21	13	1	35	93
	Birbhum ,,	4	1	3	1	1	2,642	106	16	...	122	106	122	10	238	360
	Burdwan ,,	234	180	54	169	299	4,197,099	15,425	9,206	186	24,817	11,566	6,548	398	18,512	43,329
	Total	240	181	59	170	300	4,207,452	15,564	9,247	186	24,997	11,693	6,683	409	18,785	43,782

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1920—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines: Worked by mechanical power.	Number of mines: Not worked by mechanical power.	Number of mines inspected during the year: Number of mines inspected.	Number of mines inspected during the year: Number of inspections.	Total output.	Average number of persons employed daily in and about the mines: Below ground: Adult males.	Below ground: Adult females.	Below ground: Children (under 12).	Below ground: Total below ground.	Above ground: Adult males.	Above ground: Adult females.	Above ground: Children (under 12).	Above ground: Total above ground.	Grand total below and above ground.
							A.—COAL—*contd.* Tons									
Bihar and Orissa	Hazaribagh: Bokaro-Ramgarh	5	2	3	3	4	863,028	3,417	3,437	6	6,860	2,026	1,623	66	3,715	10,575
	Hazaribagh: Giridih	9	4	5	9	14	831,293	4,546	1,956	1	6,503	2,218	695	14	2,927	9,430
	Hazaribagh: Jharia	10	5	5	...	...	134,808	451	420	18	889	406	294	33	733	1,622
	Manbhum: Jharia	332	180	152	169	464	9,159,232	26,947	21,363	277	48,587	21,563	11,788	1,581	34,932	83,519
	Manbhum: Raniganj	103	21	88	80	129	783,795	3,243	2,038	39	5,320	2,745	1,921	210	4,876	10,196
	Palamau, Daltonganj	1	1	...	1	2	39,113	146	95	33	274	108	44	10	162	436
	Sambalpur, Hingir-Rampur	1	1	...	2	3	36,987	248	156	...	404	120	16	...	136	540
	Santhal Parganas: Jainty	3	3	...	1	3	118,651	430	339	...	769	460	180	85	725	1,494
	Santhal Parganas: Raniganj	6	1	5	...	...	6,432	50	41	...	91	149	135	...	284	375
	TOTAL	476	218	258	265	619	11,973,339	39,478	29,845	374	69,697	29,795	16,696	1,999	48,490	118,187
Central Provinces	Betul	1	...	1	...	...	...	3	6	...	9	7	4	1	12	21
	Chanda, Ballarpur	8	7	1	...	...	128,162	839	151	1	991	533	171	57	761	1,752
	Chhindwara, Pench Valley	17	8	9	7	11	279,483	1,443	1,264	135	2,842	1,030	852	176	2,058	4,900
	Narsinghpur, Mohpani	1	1	...	1	4	83,335	709	354	....	1,063	564	70	...	634	1,697
	Yeotmal	2	...	2	...	...	225	4	6	5	15	8	10	...	18	33
	TOTAL	29	16	13	8	15	491,205	2,998	1,781	141	4,920	2,142	1,107	234	3,483	8,403

Burma	Northern Shan States	1	1	...	1	3	...	54	..	...	54	170	18	...	188	242
Panjab	Jhelum	13	...	13	6	8	47,803	680	2	9	691	408	.	14	422	1,113
	Mianwali	1	...	1	...	...	6,835	41	...	1	42	68	...	1	69	111
	Shahpur	2	...	2	2	2	3,440	33	...	...	33	63	...	...	63	96
	TOTAL	16	...	16	8	10	58,078	754	2	10	766	539	...	15	554	1,320
	GRAND TOTAL (COAL) FOR 1920	783	421	362	459	965	17,082,711	61,157	41,052	713	102,922	45,537	24,738	2,746	73,021	175,943
	" " OF PRECEDING YEAR	741	393	348	281	523	21,759,727	69,698	47,089	707	117,494	45,987	24,233	2,338	72,558	190,052
	DIFFERENCE	+42	+28	+14	+178	+442	—4,677,016	—8,541	—6,037	+ 6	—14,572	—450	+505	+408	+463	—14,109
	B.—MICA.															
							Cwts.									
Bihar and Orissa	Manbhum	1	...	1	...	...	½	4	3	...	7	3	1	...	4	11
	Gaya	35	...	35	4	4	4,822	482	376	95	953	285	246	98	629	1,582
	Hazaribagh	437	48	389	106	112	26,095	4,867	2,693	915	8,475	2,348	1,751	1,114	5,213	13,688
	Monghyr	18	1	17	...	...	1,069	299	178	42	519	233	122	106	461	980
	Sambalpur	1	..	1	1	1	8	40	45	5	90	...	...	..	...	90
	TOTAL	492	49	443	111	117	30,994½	5,692	3,295	1,057	10,044	2,869	2,120	1,318	6,307	16,351
Madras	Kistna	1	...	1	...	...	83	18	15	...	33	1	2	...	3	36
	Nellore	110	19	91	59	59	11,155	1,759	1,128	144	3,031	462	461	199	1,122	4,153
	Salem	3	...	3	...	...	509	31	...	...	31	115	120	24	259	290
	Trichinopoly	1	...	1	...	...	...	6	5	1	12	3	4	1	8	20
	TOTAL	115	19	96	59	59	11,747	1,814	1,148	145	3,107	581	587	224	1,392	4,499
Central Provinces	Balaghat	1	...	1	...	...	¼	4	1	...	5	...	...	...	...	5

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1920—*contd.*

Provinces.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
							B.—MICA—*concld.* Cwts.									
Rajputana	Ajmer-Merwara	66	...	66	11	11	1,925	473	148	53	674	264	133	35	432	1,106
	GRAND TOTAL (MICA) FOR 1920.	674	68	606	181	187	44,666¾	7,983	4,592	1,255	13,830	3,714	2,840	1,577	8,131	21,961
	„ „ OF PRECEDING YEAR.	674	80	594	19	24	41,683	9,132	4,740	1,438	15,310	3,320	2,554	1,478	7,352	22,662
	DIFFERENCE	...	—12	+12	+162	+163	+2,983¾	—1,149	—148	—183	—1,480	+394	+286	+99	+779	—701
							C.—MANGANESE ORE. Tons.									
Bombay	Panch Mahals	2	2	...	...	...	34,166	498	363	146	1,007	180	69	30	279	1,286
Central Provinces	Balaghat	24	1	23	23	24	211,789	1,919	2,234	190	4,343	448	397	106	951	5,294
	Bhandara	4	...	4	4	5	76,674	367	718	40	1,125	97	38	1	136	1,261
	Chhindwara	1	1	...	2	2	48,567	185	184	4	373	169	57	28	254	627
	Nagpur	21	3	18	11	12	204,054	1,400	1,463	36	2,899	664	563	82	1,309	4,208
	TOTAL	50	5	45	40	43	541,084	3,871	4,599	270	8,740	1,378	1,055	217	2,650	11,390

Madras	Vizagapatam	6	...	6	2	2	7,386	276	182	23	481	54	38	15	107	588
	GRAND TOTAL (MANGANESE) FOR 1920.	58	7	51	42	45	582,636	4,645	5,144	439	10,228	1,612	1,162	262	3,036	13,264
	" " OF PRECEDING YEAR.	59	7	52	2	3	420,184	4,482	4,502	377	9,361	1,761	1,074	227	3,062	12,423
	DIFFERENCE	—1	...	—1	+40	+42	+162,452	+163	+642	+62	+867	—149	+88	+35	—26	+841
							D.—LIMESTONE.									
							Tons.									
Burma	Northern Shan States	1	...	1	1	1	27,622	152	...	...	152	...	...	...	...	152
Central Provinces	Bilaspur	2	...	2	...	...	13,636	72	50	10	132	91	177	32	300	432
	Jabalpur, Katni	20	1	19	16	17	120,082	1,104	1,576	119	2,799	242	566	94	902	3,701
	TOTAL	22	1	21	16	17	133,718	1,176	1,626	129	2,931	333	743	126	1,202	4,133
	GRAND TOTAL (LIMESTONE) FOR 1920.	23	1	22	17	18	161,340	1,328	1,626	129	3,083	333	743	126	1,202	4,285
	TOTAL OF PRECEDING YEAR.	31	1	30	...	...	146,840	711	1,192	38	1,941	212	253	21	486	2,427
	DIFFERENCE	—8	...	—8	+17	+18	+14,500	+617	+434	+91	+1,142	+121	+490	+105	+716	+1,858
							E.—SALT.									
							Tons.									
Panjab	Jhelum	2	1	1	1	2	165,082	424	311	53	788	67	1	..	68	856
	Mianwali	1	...	1	...	...	5,190	40	...	11	51	...	...	...	...	51
	Shahpur	1	...	1	...	...	10,820	35	22	5	62	...	...	...	...	62
	GRAND TOTAL (SALT) FOR 1920.	4	1	3		2	181,092	499	333	69	901	67	1	...	68	969
	" " OF PRECEDING YEAR.	4	2	2	...	...	174,974	502	356	72	930	72	1	...	73	1,003
	DIFFERENCE	...	—1	+1	+1	+2	+6,118	—3	—23	—3	—29	—5	...	...	—5	—34

APPENDIX I—*contd.*

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. I—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1920—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
							F.—POTASH.									
							Tons.									
Punjab	Jhelum	...	...	...	...	...	50	Labour	figures	included	with those for Salt.					
	Total of preceding year	...	...	...	...	...	83									
	Difference	...	...	...	...	...	—33									
							G.—GEMS.									
							(*a*) **Rubies.**									
	Mogok					...	Carats. 88,491									
							(*b*) **Sapphires.**									
Burma	Mogok	4	2	2	3	5	33,015	778	...	...	778	429	...	...	429	1,207
							(*c*) **Spinels.**									
	Mogok					...	34,098									
	TOTAL	4	2	2	3	5	155,604	778	...	...	778	429	...	...	429	1,207

							(*d*) Beryl.									
Rajputana	Ajmer-Merwara	·2	...	2	...	...	504	11	1	...	12	...	...	...	...	12
	GRAND TOTAL (GEMS) FOR 1920	6	2	4	3	5	156,108	789	1	...	790	429	...	...	429	1,219
	" " OF PRECEDING YEAR	4	2	2	3	4	158,577	850	...	...	850	469	...	...	469	1,319
	DIFFERENCE	+2	...	+2	...	+1	−2,469	−61	+1	...	−60	−40	...	...	−40	−100
							H.—SLATE.									
							Tons.									
Bihar and Orissa	Monghyr	7	...	7	...	...	2,978	139	184	1	324	114	4	2	120	444
Panjab	Gurgaon	6	...	6	4	4	2,008	117	...	71	188	37	...	...	37	225
	Kangra	5	...	5	1	1	5,359	114	2	2	118	30	26	18	74	192
	TOTAL	11	...	11	5	5	7,367	231	2	73	306	67	26	18	111	417
	GRAND TOTAL (SLATE) FOR 1920.	18	...	18	5	5	10,345	370	186	74	630	181	30	20	231	861
	" " OF PRECEDING YEAR.	15	...	15	...	...	11,091	375	161	94	630	122	32	24	178	808
	DIFFERENCE	+3	...	+3	+5	+5	−746	−5	+25	−20	...	+59	−2	−4	+53	+53
							I.—GOLD.									
							Ozs.									
Bihar and Orissa	Singhbhum	1	1	...	...	...	...	27	15	...	42	26	28	...	54	96
Madras	Anantapur	3	3	...	1	2	13,615	77	...	...	77	224	15	22	261	338
	GRAND TOTAL (GOLD) FOR 1920.	4	4	...	1	2	13,645	104	15	...	119	250	43	22	315	434
	" " OF PRECEDING YEAR.	4	4	..	...	...	11,191	173	17	...	190	391	143	58	592	782
	DIFFERENCE	...	...	...	+1	+2	+2,454	−69	−2	...	−71	−141	−100	−36	−277	−348

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1921—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
							J.—IRON ORE.									
							Tons.									
Bihar and Orissa	Singhbhum	4	1	3	1	2	109,633	378	253	45	676	333	213	31	577	1,253
Rajputana	Ajmer-Merwara	2	1	1	...	...	4	3	...	...	3	9	...	...	9	12
Burma	Mandalay	2	...	2	...	...	19,104	159	4	...	163	372	73	...	445	608
	Northern Shan States	2	...	2	1	1	18,279	150	...	...	150	349	21	...	370	520
	Total	4	...	4	1	1	37,383	309	4	...	313	721	94	...	815	1,128
Central Provinces	Jabalpur	1	...	1	1	1	1,452	24	50	18	92	75	20	10	105	197
	GRAND TOTAL (IRON) FOR 1920.	11	2	9	3	4	148,472	714	307	63	1,084	1,138	327	41	1,506	2,590
	„ „ OF PRECEDING YEAR.	4	1	3	...	...	101,322	384	346	88	818	195	90	15	300	1,118
	DIFFERENCE	+7	+1	+6	+3	+4	+47,150	+330	—39	—25	+266	+943	+237	+26	+1,206	+1,472

K.—WOLFRAM.

							Tons.								
Burma	Mergui	2	...	2	...	...	60	93	...	...	93	213	17	13	243	336
	Tavoy	47	4	43	...	...	1,672	2,751	130	19	2,900	1,187	59	31	1,277	4,177
	Thaton	3	...	3	...	...	1½	26	5	...	31	...	..	...	...	31
	TOTAL	52	4	48	...	...	1,733½	2,870	135	19	3,024	1,400	76	44	1,520	4,544
	GRAND TOTAL (WOLFRAM) FOR 1920.	52	4	48	...	...	1,733½	2,870	135	19	3,024	1,400	76	44	1,520	4,544
	" " OF PRECEDING YEAR.	123	5	118	6	7	2,905	5,398	104	36	5,538	3,666	393	117	4,176	9,714
	DIFFERENCE	—71	—1	—70	—6	—7	—1,171½	—2,528	+31	—17	—2,514	—2,266	—317	—73	—2,656	—5,170

L.—MAGNESITE.

							Tons.								
Madras	Salem	2	...	2	1	1	11,30)	204	146	248	598	105	...	29	134	732
	TOTAL OF PRECEDING YEAR	1	...	1	...	...	13,012	221	169	261	651	60	...	27	87	738
	DIFFERENCE	+1	...	+1	+1	+1	—1,712	—17	—23	—13	—53	+45	..	+2	+47	—6

M.—CHROMITE.

							Tons.								
Baluchistan	Zhob	22	...	22	...	...	20,677	276	...	...	276	100	...	...	100	376
Bihar and Orissa	Singhbhum	2	...	2	...	...	2,546	100	188	2	290	174	347	18	539	829
	GRAND TOTAL (CHROMITE) FOR 1920.	24	...	24	...	...	23,123	376	188	2	566	274	347	18	639	1,205
	TOTAL OF PRECEDING YEAR.	26	...	26	...	...	14,067	268	51	7	326	93	31	15	139	465
	DIFFERENCE	—2	...	—2	...	...	+9,056	+108	+137	—5	+240	+181	+316	+3	+500	+740

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1920—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 13).	Total below ground.	Adult males.	Adult females.	Children (under 13).	Total above ground.	
							N.—COPPER ORE.									
							Tons.									
Bihar and Orissa	Singhbhum	2	1	1	1	3	28,167	486	...	...	486	938	622	48	1,608	2,094
Central Provinces	Balaghat	1	...	1	...	...	...	20	6	...	26	17	15	4	36	62
	GRAND TOTAL (COPPER ORE) FOR 1920.	3	1	2	1	3	28,167	506	6	...	512	955	637	52	1,644	2,156
	TOTAL OF PRECEDING YEAR.	2	1	1	1	3	32,756	652	12	4	668	1,156	788	54	1,998	2,666
	DIFFERENCE	+1	...	+1	...	...	—4,589	—146	—6	—4	—156	—201	—151	—2	—354	—510
							O.—BAUXITE.									
							Cwts.									
Bombay	Kaira	1	1	...	...	...	78,630	45	35	11	91	6	...	...	6	97
	TOTAL OF PRECEDING YEAR	1	...	1	...	...	33,640	52	68	1	121	4	...	...	4	125
	DIFFERENCE	...	+1	—1	...	...	+44,990	—7	—33	+10	—30	+2	...	...	+2	—28

P.—CLAY.

							Tons.								
Bihar and Orissa	Bhagalpur	3	...	3	...	...	1,326	30	30	...	60	76	97	22	195	255
	Manbhum	1	...	1	1	5	18,066	85	38	...	123	36	15	...	51	174
	Palamau	1	...	1	...	...	5,888	18	12	6	36	33	6	4	43	79
	TOTAL	5	...	5	1	5	25,280	133	80	6	219	145	118	26	289	508
Central Provinces	Jabalpur	4	2	2	1	1	57,233	364	465	46	875	41	...	...	41	916
Delhi	Delhi	3	...	3	...	...	8,025	23	...	...	23	18	5	...	23	46
	GRAND TOTAL (CLAY) FOR 1920.	12	2	10	2	6	90,538	520	545	52	1,117	204	123	26	353	1,470
	TOTAL OF PRECEDING YEAR.	9	3	6	...	...	99,760	579	674	74	1,327	284	172	89	545	1,872
	DIFFERENCE	+3	—1	+4	+2	+6	—9,222	—59	—139	—22	—210	—80	—49	—63	—192	—402

Q.—LEAD ORE.

							Tons.*								
Burma	Northern Shan States	1	1	...	1	5	128,908	612	...	...	612	338	...	...	338	950
Central Provinces	Drug	1	...	1	...	...	$\frac{1}{10}$	5	12	...	17	5	12	...	17	34
	GRAND TOTAL (LEAD ORE) FOR 1920.	2	1	1	1	5	$128,908\frac{1}{10}$	617	12	...	629	343	12	...	355	984
	TOTAL OF PRECEDING YEAR	1	...	1	...	...	$2\frac{1}{5}$	5	10	..	15	5	10	...	15	30
	DIFFERENCE	+1	+1	...	+1	+5	$+128,905\frac{11}{10}$	+612	+2	...	+614	+338	+2	...	+340	+954

R.—TIN ORE.

							Tons.								
Bihar and Orissa	Hazaribagah	1	1	...	1	1	$1\frac{1}{5}$	55	25	...	80	31	17	12	60	140
Burma	Mergui	10	...	10	...	...	110	279	14	8	301	140	4	...	144	445
	Tavoy	12	1	11	...	...	936	287	8	...	295	198	9	1	208	503
	Thaton	2	...	2	...	...	8	18	12	...	30	4	6	...	10	40
	TOTAL	24	1	23	...	..	1,054	584	34	8	626	342	19	1	362	988
	GRAND TOTAL (TIN ORE) FOR 1920.	25	2	23	1	1	$1,055\frac{1}{5}$	639	59	8	706	373	36	13	422	1,128
	TOTAL OF PRECEDING YEAR	8	2	6	...	...	701	133	57	37	227	134	29	22	185	412
	DIFFERENCE	+17	...	+17	+1	+1	$+354\frac{1}{5}$	+506	+2	—29	+479	+239	+7	—9	+237	+716

* 2,869,727 oz. of silver extracted. See page 35.

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1920—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines: Worked by mechanical power.	Number of mines: Not worked by mechanical power.	Number of mines inspected during the year: Number of mines inspected.	Number of mines inspected during the year: Number of inspections.	Total output.	Average number of persons employed daily in and about the mines: Below ground: Adult males.	Below ground: Adult females.	Below ground: Children (under 12).	Below ground: Total below ground.	Above ground: Adult males.	Above ground: Adult females.	Above ground: Children (under 12).	Total above ground.	Grand total below and above ground.
							S.—STEATITE.									
							Cwts.									
Central Provinces	Jabalpur	3	...	3	3	3	45,910	70	48	...	118	26	49	17	92	210
Madras	Kurnool	1	...	1	...	...	...	4	3	...	7	...	...	...	...	7
	GRAND TOTAL (STEATITE) FOR 1920.	4	...	4	3	3	45,910	74	51	...	125	26	49	17	92	217
	" " OF PRECEDING YEAR.	4	...	4	...	...	29,122	67	53	...	120	21	43	11	75	195
	DIFFERENCE	...	...	...	+3	+3	+16,788	+7	—2	...	+5	+5	+6	+6	+17	+22
							T.—FULLER'S EARTH.									
							Tons.									
Central Provinces	Jabalpur	...	...	...	...	...	197									
	TOTAL OF PRECEDING YEAR	...	...	...	...	...	247	(*Labour figures included with those for Limestone*)								
	DIFFERENCE	...	...	...	...	...	—50									

U.—SILVER.																	
							Ozs.*										
Burma	Northern Shan States	...	...	...	...	...	2,869,727	...	*Labour figures included with those for Lead Ore.*							...	...
Madras	Anantapur	...	...	...	...	...	868	...	*Labour figures included with those for Gold.*							...	...
	GRAND TOTAL (SILVER) FOR 1920.	...	...	...	...	...	2,870,595	...	...	...	...	...	...	...	...	...	...
	TOTAL OF PRECEDING YEAR	...	...	...	...	...	753	...	...	...	...	...	...	...	...	...	...
	DIFFERENCE	...	...	...	...	...	+2,869,842	...	...	...	...	...	...	...	...	...	...
V.—SAMARSKITE.																	
							Cwts.										
Madras	Nellore	...	...	...	...	...	3	...	*Labour figures included with those for Mica.*							...	...
	TOTAL OF PRECEDING YEAR	...	...	...	...	...	2½	...								...	...
	DIFFERENCE	...	...	...	...	...	+½	...									...
W.—GRAPHITE.																	
							Cwts.										
Bihar and Orissa	Singhbhum	1	...	1	...	...	5	9	16	...	25	2	2	...	4	29	
Rajputana	Ajmer-Merwara	5	...	5	...	...	337	26	5	...	31	6	2	...	8	39	
Central Provinces	Betul	1	...	1	...	...	360	2	3	...	5	2	3	...	5	10	
	GRAND TOTAL (GRAPHITE) FOR 1920.	7	...	7	...	...	702	37	24	...	61	10	7	...	17	78	
	TOTAL OF PRECEDING YEAR	4	...	4	...	...	103	12	5	...	17	4	1	...	5	22	
	DIFFERENCE	+3	...	+3	...	...	+599	+25	+19	...	+44	+6	+6	...	+12	+56	
X.—OCHRE.																	
							Tons.										
Bihar and Orissa	Puri	1	1	...	...	...	400	8	...	...	8	29	...	...	29	37	
	TOTAL OF PRECEDING YEAR	1	1	...	...	...	184	12	...	...	12	18	...	13	31	43	
	DIFFERENCE	...	...	...	...	...	+216	−4	...	...	−4	+11	...	−13	−2	−6	

* Estimated from 128,906 tons of Lead Ore, See page 33.

Table No. 1—*concld.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1920—*concld.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								
								Below ground.				Above ground.				Grand total below and above ground.
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
							Y.—MOLYBDENITE.									
							Cwts.									
Burma	Tavoy	1	...	1	...	...	1	...	*Labour figures included with those for Wolfram*						...	...
	Total of preceding year	1	...	1	...	...	4½	5	...	...	5	5	...	...	5	10
	Difference	...	...	...	...	...	−3½	−5	...	...	−5	−5	...	...	−5	−10
							Z.—BARYTES.									
							Cwts.									
Madras	Kurnool	1	...	1	...	...	4,260	5	...	...	5	4	7	9	20	25
	Total of preceding year	1	...	1	...	...	4,640	4	...	6	10	2	7	1	10	20
	Difference	...	...	...	...	...	−380	+1	...	−6	−5	+2	...	+8	+10	+5

GRAND TOTAL (ALL MINERALS) 1920.	1,716	518	1,198	702	1,228	Tons. 18,452,068 1/10 Cwts. 174,172 3/4 Carats. 156,108 Troy ounces. 2,884,240	83,490	54,457	3,082	141,029	56,990	31,178	5,002	93,170	234,199
GRAND TOTAL OF PRECEDING YEAR.	1,719	502	1,217	312	564	Tons. 22,778,355 1/2 Cwts. 109,195 Carats. 158,577 Troy ounces. 11,944	93,830	59,671	3,240	156,741	58,011	29,894	4,510	92,415	249,156
DIFFERENCE . . .	—3	+16	—19	+390	+664	Tons. —4,326,287 9/10 Cwts. +64,977 1/4 Carats. —2,469 Troy ounces. +2,872,296	—10,340	—5,214	—158	—15,712	—1,021	+1,284	+492	+755	—14,957

Table No. 2.

Analyses of figures relating to output of coal.

Province.	District and mineral field.	Opening stocks.		Raisings.		Total.		Despatches.		Colliery Consumption.		Coal delivered to coking.		Closing stocks.		Coke made.	
		Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Hard coke.	Soft coke.
		Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Assam	Lakhimpur	3,475	...	285,974	...	289,449	...	274,627	...	10,631	...	767	...	3,424	...	256	...
	Naga Hills	902	...	38,991	...	39,893	...	39,063	...	352	...	...	...	478	...	...	...
	Total	4,377	...	324,965	...	329,342	...	313,690	...	10,983	...	767	...	3,902	...	256	...
Baluchistan	Loralai	20	...	...	...	20	...	20	...	...	..	...	...	...	...	...	...
	Quetta-Pishin	369	1,421	311	4,826	680	6,247	369	5,134	...	176	...	...	311	937	...	...
	Sibi-Khost	64	338	3,252	19,283	3,316	19,621	3,030	14,394	10	4,191	...	...	276	1,036	...	...
	Total	453	1,759	3,563	24,109	4,016	25,868	3,419	19,528	10	4,367	...	...	587	1,973	...	...
Bengal	Bankura-Raniganj	8	1,750	5,752	1,959	5,760	3,709	5,684	639	65	1,050	...	...	11	2,020	..	...
	Birbhum ,,	100	...	2,159	484	2,259	484	1,721	...	324	466	...	...	213	18	...	...
	Burdwan ,,	779,663	67,910	3,475,802	721,297	4,255,465	789,207	3,839,392	303,301	229,464	444,785	27,422	6,287	159,187	34,834	2,180	18,317
	Total	779,771	69,660	3,483,712	723,740	4,263,483	793,400	3,846,797	303,940	229,853	446,301	27,422	6,287	159,411	36,872	2,180	18,317

Bihar and Orissa	Hazaribagh	Bokaro Ramgarh	27,463	799	742,304	120,724	769,767	121,523	766,005	102,288	2,450	7,054	...	11,419	1,312	762	428	6,427
		Giridih	22,580	4,006	613,754	217,539	636,334	221,545	623,898	102,322	2,562	52,758	100	60,181	9,774	6,284	45,866	...
		Jharia	84,775	19,292	104,415	30,393	189,190	49,685	149,553	24,106	12,037	13,358	1,558	3,785	26,042	7,936	2,027	150
	Manbhum	Jharia	2,874,948	343,349	7,625,947	1,533,285	10,500,895	1,876,634	8,028,554	785,920	603,825	642,503	250,397	165,842	1,618,119	282,369	126,196	111,806
		Raniganj	303,474	43,533	622,826	160,969	926,300	204,552	565,552	94,403	92,243	70,654	65,419	10,753	203,086	28,742	1,209	44,320
	Palamau-Daltonganj		358	47	35,945	3,168	36,303	3,215	26,297	2,432	2,275	783	...	...	731	...	...	...
	Sambalpur-Hingir Rampur		1	29	30,527	6,460	30,528	6,489	23,984	...	6,544	6,489	...	...	...	..	...	...
	Santal-Parganas.	Jainty	19,835	7,175	109,882	8,769	129,717	15,944	127,025	8,440	...	4,149	...	...	2,692	3,355	...	...
		Raniganj	1,035	638	4,935	1,497	5,970	2,135	5,175	727	377	309	..	...	418	1,099	...	...
		TOTAL	3,334,469	418,918	9,890,535	2,082,804	13,225,004	2,501,722	10,316,043	1,120,638	729,313	798,557	317,474	251,980	1,862,174	330,547	175,726	163,213
Central Provinces	Betul		...	..	...	...	...	...	...	...	...	..	...	...	...	..	...	...
	Chanda		1,006	2,646	101,464	26,698	102,470	29,344	96,729	12,294	4,686	16,407	...	...	1,055	643	...	...
	Chhindwara		1,218	2,289	226,592	54,891	227,810	55,180	221,658	32,553	3,719	21,625	...	...	2,433	1,102	...	...
	Narsinghpur		29	5,624	61,287	22,048	61,316	27,672	57,232	20,316	3,842	5,827	...	...	242	1,529	...	...
	Yeotmal		...	...	155	70	155	70	52	44	5	...	...	...	98	26	...	...
		TOTAL	2,253	10,559	389,498	101,707	391,751	112,266	375,671	65,207	12,252	43,759	...	...	3,828	3,300	...	...
Burma	Northern Shan States		...	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Panjab	Jhelum		...	2,048	1,691	46,112	1,691	48,160	916	41,512	775	2,103	...	...	...	4,515	...	...
	Mianwali		...	1,149	1,227	5,608	1,227	6,757	1,151	5,683	...	...	...	...	76	1,074	...	...
	Shahpur		...	1,044	191	3,249	191	4,293	191	3,215	...	54	...	...	...	1,024	...	...
		TOTAL	...	4,241	3,109	54,969	3,109	59,210	2,258	50,440	775	2,157	...	...	76	6,613	...	...
	GRAND TOTAL 1920		4,121,323	505,137	14,095,382	2,987,329	18,216,705	3,492,466	14,857,878	1,559,753	963,186	1,295,141	345,663	258,267	2,029,978	379,305	178,162	181,530

APPENDIX I—*contd.*

Table No. 3.

Number of mines opened and closed during the year ending 31st December 1920.

Province.	District.		Number of mines opened.	Number of mines closed.
		COAL.		
Assam	Lakhimpur		...	1
Punjab	Jhelum		3	...
Baluchistan	Sibi-Khost		2	...
Bengal	Burdwan-Raniganj		24	7
Burma	Northern Shan States		1	1
Bihar and Orissa	Hazaribagh	Bokaro-Ramgarh	1	2
		Jharia	2	...
		Giridih	2	...
	Manbhum	Jharia	37	7
		Raniganj	10	13
	Santhal Parganas, Raniganj		2	...
		Total	54	22
Central Provinces	Betul		1	...
	Chanda		...	2
	Chhindwara		6	...
	Yeotmal		1	...
		Total	8	2
		Total (Coal)	92	33
		MICA.		
Bihar and Orissa	Gaya		12	10
	Hazaribagh		113	115
	Monghyr		12	7
	Manbhum		1	...
		Total	138	132

APPENDIX I—*contd.*

Table No. 3—*contd.*

Number of mines opened and closed during the year ending 31st December 1920—*contd.*

Province.	District.	Number of mines opened.	Number of mines closed.
	MICA—*contd.*		
Central Provinces	Balaghat	1	...
Madras	Nellore	18	21
	Salem	...	1
	Trichinopoly	1	1
	Total	19	23
Rajputana	Ajmer-Merwara	37	21
	Total (Mica)	195	176
	MOLYBDENITE.		
Burma	Tavoy	...	1
	MANGANESE ORE.		
Central Provinces	Balaghat	5	...
	MAGNESITE.		
Madras	Salem	1	...
	LIMESTONE.		
Madras	Bilaspur	1	...
	Jabalpur	4	4
	Total	5	4
Burma	Northern Shan States	1	...
	Total (Limestone)	6	4
	IRON ORE.		
Bihar and Orissa	Singbhum	2	...

APPENDIX I—*contd.*

Table No. 3—*contd.*

Number of mines opened and closed during the year ending 31st December 1920—*contd.*

Province.	District.	Number of mines opened.	Number of mines closed.
	IRON ORE—*contd.*		
Burma	Mandalay	2	1
	Northern Shan States	2	1
	Total	4	2
Central Provinces	Jabalpur	1	...
Rajputana	Ajmer-Merwara	1	1
	Total (Iron)	8	3
	WOLFRAM.		
Burma	Mergui	...	1
	Tavoy	5	24
	Thaton	1	...
	Total (Wolfram)	6	25
	GOLD.		
Bihar and Orissa	Singhbhum	...	1
	COPPER ORE.		
Bihar and Orissa	Singhbhum	1	...
	CLAY.		
Bihar and Orissa	Bhagalpur	1	1
Delhi	Delhi	2	...
	Total (Clay)	3	1

APPENDIX I—*contd.*

Table No. 3—*concld.*

Number of mines opened and closed during the year ending 31st December 1920—*concld.*

Province.	District.	Number of mines opened.	Number of mines closed.
	LEAD ORE.		
Burma	Northern Shan States	1	...
Central Provinces	Drug	1	1
	Total (Lead Ore)	2	1
	TIN ORE.		
Burma	Mergui	4	3
	Tavoy	2	2
	Total (Tin ore)	6	5
	SLATE.		
Bihar and Orissa	Monghyr	2	...
Punjab	Gurgaon	1	...
	Total (Slate)	3	...
	GRAPHITE.		
Bihar and Orissa	Bhagalpur	1	...
Central Provinces	Betul	1	...
Rajputana	Ajmer-Merwara	3	3
	Total (Graphite)	5	3
	BERYL.		
Rajputana	Ajmer-Merwara	2	...
	GRAND TOTAL (all mines)	335	253

APPENDIX I—*concld.*

Table No. 4.

The following table shows the fluctuations in the output of the principal minerals raised from mines classed under the Indian Mines Act, 1901. The other minerals raised are gems, slate, magnesite, steatite, clay, bauxite, fuller's earth, graphite, molybdenite, ochre, samarskite and barytes.

Year.	Coal.	Manganese ore.	Mica.	Limestone	Salt.	Gold.	Copper ore.	Wolfram.	Iron ore.	Chromite.	Tin ore.	Lead ore.	Silver.
	Tons.	Tons.	Cwts.	Tons.	Tons.	Troy ozs.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Ozs.
1911 .	12,048,726	441,426	31,636	92,692	124,603	8,377	2,079	420	36,601	289	14	½	...
1912 .	14,044,368	423,464	41,360	91,784	131,233	7,269	3,984	1,270	79,383	6	63	8	...
1913 .	15,486,318	637,801	43,650	71,259	138,540	11,019	3,639	1,376	98,371	3,414	87	1½	...
1914 .	15,727,631	585,672	38,189	146,505	135,518	19,573	4,400	1,576	167,600	3,000	45	3½	...
1915 .	16,352,480	378,172	24,063	64,179	144,770	24,320	8,010	1,973	126,617	1,465	14	7	612
1916 .	16,419,082	564,032	35,978	45,200	160,357	23,235	2,671	2,955	142,606	5,004	88	7	1,861
1917 .	17,326,384	497,052	35,896	62,340	153,542	22,991	20,108	3,966	178,303	17,766	162	...	1,381
1918 .	19,847,039	416,357	51,572	131,451	158,813	19,916	3,619	3,609	115,980	24,030	602	3	1,169
1919 .	21, 59,727	420,184	41,963	146,840	174,974	11,191	32,736	2,995	101,322	14,067	701	2½	753
1920 .	17,082,711	562,636	44,636½	161,340	181,093	13,045	28,167	1,733½	148,472	23,123	1,056	128,908	2,870,595

Table No. 5.

The following table shows the amount of coal raised, the average number of persons working daily and the death-rates during the years 1911 to 1920 in respect of coal mines under the Indian Mines Act, 1901 :—

Year.	Amount of coal raised.	Average number of persons working daily below and above ground.	Number of deaths below and above ground.	Death-rates	
				Per 1,000,000 tons raised.	Per 1,000 persons working daily below and above ground.
1911 . . .	12,048,726	106,598	148	12·28	1·38
1912 . . .	14,044,368	121,392	157	11·17	1·29
1913 . . .	15,486,318	133,042	185	11·95	1·39
1914 . . .	15,727,631	137,851	145	9·22	1·05
1915 . . .	16,352,480	145,537	166	10·15	1·14
1916 . . .	16,419,082	143,459	169	10·29	1·18
1917 . . .	17,326,384	153,683	163	9·41	1·06
1918 . . .	19,847,039	176,269	197	9·93	1·12
1919 . . .	21,759,727	190,052	260	11·95	1·37
1920 . . .	17,082,711	175,943	172	10·07	0·98

APPENDIX II.

ACCIDENTS IN MINES.

Table No. I.

List of Fatal Accidents in mines regulated by the Indian Mines Act, 1901, during the year 1920.

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			EXPLOSION OF FIREDAMP—(*5 deaths*).			
1	26th April, 7-30 P.M.	Choitodih mine, Katrasgarh P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Budhan Chamar *alias* Puran, (*m.*), 28 ; Lukshu Chamar *alias* Nanku, (*m.*), 35, *Coal-cutters.*	Coal	Deceased were about to commence work in a gallery when one of their lamps ignited an accumulation of fire damp. They were both severely burnt and died after intervals of 18 and 36 hours respectively. Inspection and inquiry made.
2	4th October, 9-30 A.M.	Malkera mine, Katrasgarh P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Khedu Dhobi, (*m.*) 22, *Coal-cutter.*	Coal	Deceased, carrying an open light, entered a narrow main gallery in a coal seam and was about to commence cutting coal in the face when he ignited an accumulation of gas. An explosion took place and he was severely burnt. He died eight hours later. Inspection and inquiry made. *See "Report," page 8.*
3	21st December, 7-30 P.M.	Pandaveswar mine, Pandaveswar P. O., Bengal.	Highfield Colliery, Ld.	Sakhu Meah, (*m.*), 21 ; Niroo Kol, (*m.*), 25, *Coal-cutters.*	Coal	The deceased persons, carrying open lights, entered a discontinued gallery and ignited an accumulation of fire damp. They were both severely burnt and died two days later. Inspection and inquiry made.
			FALLS OF ROOF AND SIDES.			
			Fall of roof—(*48 deaths*).			
4	4th January, 9-30 A.M.	Loyabad mine, Banojora P. O., Bihar and Orissa.	Burrakar Coal Co., Ld.	Narayan Barhi, (*m.*), 30, *Propping Sirdar.*	Coal	A gang of men, directly supervised by an experienced European overman, were taking out props in a pillar cutting district. Deceased, although warned not to do so, knocked out a certain prop, and brought about the fall of roof coal, 9 inch thick, over an area about 6 feet square. He was knocked down and died within half an hour. The roof coal fell from a height of about 7 feet. Inspection and inquiry made.
5	8th January, 7-30 A.M.	Ghandhala (No. 1) mine, Dandot P. O., Punjab.	Pandit Gain Chand	Mohomed Bux, (*m.*), 15, *Coal-cutter.*	Coal	Deceased was cutting coal when a slip in the roof was exposed, causing a fall of shale. A large piece fell on his head and injured him so severely that he died within 15 minutes. Inspection and inquiry made.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*a*) Fall of roof—*contd.*			
6	6th February, 2 A.M.	Tikak mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Tinging Bhutia, (*m.*), 37, *Sirdar.*	Coal	Deceased, against the sirdar's orders, lay down in an opening or chamber only 4 feet high. A piece of soft coal, weighing about 2 lbs. fell from the roof and struck him on the spleen. He died shortly after. Inspection and inquiry made.
7	10th February, 12 Noon.	Mohpani mine, Mohpani P. O., Central Provinces.	Great Indian Peninsula Railway.	Matadin Thakur, (*m.*), 42, *Coal-cutter.*	Coal	Whilst deceased was cutting coal near a fault a fall of roof took place. He sustained injuries which caused death a month later.
8	14th Februsay, 11 P.M.	Bhelatand mine, Sijua P. O. Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Sardar Singh, (*m.*), 36, *Sirdar.*	Coal	Deceased was crushed under a slab of roof shale, 12′×0″ to 5′×6″ thick, which fell from the roof at a height of 6 feet. He was said to have been sounding the roof or trying to take down the unsound portion at the time. Inspection and inquiry made.
9	26th February, 7 P.M.	Bulliari mine, P. O. Kusunda, Bihar and Orissa.	Chuni Lal Coal Co.	Etwari Dhobi, (*m.*), 20, *Coal-cutter.*	Coal	Deceased was one of four coal cutters who were engaged in extracting a pillar of coal. Coal fell from the goaf side of the pillar, and deceased passed through a fence and began to pick up the fallen coal. He was killed on the spot by a slab of roof stone, 8′×4′×6″ thick, which fell from a height of 10 feet. Inspection and inquiry made.
10	16th March, 2 P.M.	Chittidand mine, Golpur P. O., Punjab.	Punjab Coal Co., Ltd.	Fakir Mohammed, (*m.*), 16, *Stone-man.*	Coal	Deceased was packing dirt in a disused road when a piece of roof coal fell on him and killed him instantly. Inspection and inquiry made.
11	4th April, 1 A.M.	Surangi (Harlaghati) mine, Ganwan P. O., Bihar and Orissa.	F. F. Chrestien & Co., Ltd.	Kungal Koiri, (*m.*), 30; Bandhu Koiri, (*m.*), 25, *Drillers.*	Mica	Six men were engaged in driving a level, 7′ 6″ wide and 6′ high. Four of them were working at the face and the two deceased were sitting down resting about 6 feet back from the face. Without warning a mass of pegmatite and mica schist, 5′×3′×3′ fell from the roof. The deceased were killed instantly and a carrier, named Sukar Gope, was seriously injured. The men in the face escaped without injury. Inspection and inquiry made.
12	4th April, 5 A.M.	Jotejanaki mine, Toposi P. O, Bengal.	P. K. Chatterjee	Arshun Mejhian, (*f.*), 21, *Coal-carrier.*	Coal	The deceased with two other women, in the absence of the sirdar, broke down a fence and were loading fallen coal in a disused gallery when a mass of overhanging coal and shale, weighing about 2 tons, fell upon them from a height of twelve feet. Deceased was killed instantly and her companions sustained serious injuries. Inspection and inquiry made.
13	9th April, 10-30 P.M.	Benahir mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ltd.	Biswanath Chamar, (*m.*), 35, *Coal-cutter.*	Coal	Deceased entered a gallery which had been fenced off because the roof was unsound. Whilst cutting coal in the gallery a mass of roof stone, 6′×5′×3″ to 6″, fell upon him from a height of 7 feet, killing him instantly. Inspection and inquiry made.

14	10th April, 9 P.M.	Ledo Valley (Old West) mine. Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Among Singh Chetri, (*m.*), 30, *Tub-filler.*	Coal	Whilst a gang of loading coolies were loading coal in an "opening" or chamber, 30′ 0″×70′ 0″×13′ 0″ high, a fall of some 50 tons of coal took place suddenly. Deceased was killed instantly and another man was severely injured. Inspection and inquiry made.
15	15th April, 1 P.M.	Baraboni (Joyramdanga) mine, Asansol P. O., Bengal.	New Beerbhum Coal Co., Ltd.	Chandka Passi, (*m.*), 32, *Coal-cutter.*	Coal	A sirdar, finding a portion of the roof unsafe in a place where some overhanging roof coal had been blasted down, fenced it off and went away. Deceased broke down the fence and took some coal carriers inside to load out the coal. A piece of shaley coal, measuring 2′ 2″×1′ 0″×0′ 3″, fell on to him from a height of seventeen feet. He sustained serious injuries and died two hours later. Inspection and inquiry made.
16	18th April, 1 P.M.	Dandot mine, Dandot P. O., Punjab.	Ishar Das Kapur	Ahmed Khan, (*m.*), 30, *Coal-cutter.*	Coal	Deceased was injured by a mass of roof stone which fell from between the timbers in a longwall working. He died three weeks later.
17	23rd April, 4-30 P.M.	Namdang mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Hastey Thapa, (*m.*), 25, *Coal-filler.*	Coal	Deceased sustained injuries to the head and back by the fall of stone in 'an 'opening' or chamber. He died in hospital five months later. Inspection and inquiry made.
18	28th April, 3-30 A.M.	Dumarkunda mine, Chirkunda P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Muchiram Bauri, (*m.*), 14, *Coal-carrier.*	Coal	A mass of shale roof, measuring 10′ 0″ ×14′ 3″ × 0′ 6″, fell from a height of eight feet on to deceased who was carrying a basket of coal. He was severely injured and died three and a half hours later. Inspection and inquiry made.
19	7th May, 12-30 P.M.	Golukdih mine, Jharia P. O., Bihar and Orissa.	N. M. Chowdhury & Co.	Hetu Bhuia, (*m.*), 36, *Coal-cutter.*	Coal	Deceased was cutting floor coal in a gallery 11 feet in height when a slab of coal, 9′×4′×5″, fell from a 'slip' in the roof and pinned him down. He was injured so severely that he died within an hour. Inspection and inquiry made. *(See Report page 8.)*
20	7th May, 2 P.M.	Khost mine, Khost P. O., Baluchistan.	North Western Railway	Qadr Bux, (*m.*), 45, *Carpenter.*	Coal	Whilst engaged in timbering a longwall face deceased was killed by the fall of roof stone, 18′×20′×3′ thick.
21	8th May, 4-30 P.M.	Namdang mine, Margherita P. O., Assam.	Assam Railways Trading Co., Ld.	Dhan Lama, (*m.*), 30, *Coal-cutter.*	Coal	Whilst deceased was undercutting the corner of a pillar of coal, a mass of some two tons of coal fell upon him without warning. He was killed instantly.
22	11th May, 5-30 A.M.	Sodepur mine, Dishergarh P. O., Bengal.	Bengal Coal Co., Ld.	Pralhad Korah, (*m.*), 30, *Coal-cutter.*	Coal	A mass of roof coal, measuring 27′ 0″ × 9′ 9″ × 3′ 6″, broke away from a concealed 'slip' and fell from a height of nine feet on to deceased, who was carrying a basket of coal underneath it, killing him instantly. Inspection and inquiry made.
23	11th May, 9 A.M.	Loyabad mine, Bansjora P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	C. W. Caston, (*m.*), 35, P. Quinn, (*m.*), 35, *Overmen*; Kodo Pasi, (*m.*), 9, *not employed*; Bedesia Roy, (*m.*), 35, *Coolie.*	Coal	A severe crush came on in a goaf and affected a large area of workings standing on pillars. Materials such as rails, crossings and coal tubs were being withdrawn from the dangerous area, and a number of persons, superintended by two European overmen, were engaged in this work. The crush extended and finally resulted in the sudden collapse of a very large area accompanied by a severe airblast. The work-persons escaped but the two overmen were caught under the fall and completely buried. Bedesia Roy was caught by the blast and blown against the side of the travelling road as he was running out of the mine, and Kodo Pasi, who was walking along a pathway in front of the incline, was hurled a distance of 35 feet. Both of them were fatally injured. Inspection and inquiry made. *See Report, page 9.*

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*a*) **Fall of roof**—*contd.*			
24	16th May, 2 A.M.	Bansdeopur mine, Kusunda P. O., Bihar and Orissa.	Bansdeopur Coal Co., Ld.	Harkhu Kole, (*m.*), 3 \, *Coal-cutter.*	Coal	Deceased was loading coal which he had got down from the side of a gallery, 27 feet in height. A mass of undercut coal, 17′× 5′×2′ 9″ thick, lying between two "breaks" came away from a dirt band, at a height of 10 feet, and fell on him. Death was instantaneous. Inspection and inquiry made.
25	1st June, 4 P.M.	Northern mine, Nowagarh P. O., Bihar and Orissa.	Northern Coal Co., Ld.	Roby Mahato, (*m.*), 40, *Coal-cutter.*	Coal	A wedge shaped piece of coal, 3′×3′×3′, fell from a slip in the roof of a gallery, 6 feet high and 9 feet wide, and fractured the skull of deceased, who was sitting underneath. He had probably released the coal by side dressing. Inspection and inquiry made.
26	13th June, 8-30 A.M.	Jainty Central mine, Karmatar P. O., Bihar and Orissa.	Jainty Central Colliery, Ld.	Malo Mejhian, (*f.*), 16, *Coal-carrier.*	Coal	Deceased was loading coal which had been robbed off the corner of a pillar when she was struck by a mass of roof-stone, measuring 21′ 0″×8′ 0″× 1′ 0″, which fell from a height of 6½ feet. She was killed instantly Inspection and inquiry made.
27	25th June, 1-30 A.M.	Tikak mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Monbahadur Ali, (*m.*), 28, *Sirdar.*	Coal	Deceased was killed in an 'opening' or chamber by the fall of stone, measuring 4′×3′×1′. The sirdar had ordered him not to go to the place, but he disobeyed.
28	12th July, 11 P.M.	Bulliari mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Janki Singh, (*m.*), 40, Tekon Dosad, (*m.*), 26, *Stone-cutters*; Manik Roy, (*m.*), 30, *Sirdar.*	Coal	The two deceased stone-cutters were loading stone which had been blasted down from the roof in a gallery, 11 feet wide and 6 feet high, at a point near faulty ground, when the roof fell and imprisoned them. The deceased sirdar and a contractor's foreman went to the rescue, when a second fall occurred killing the two stone cutters and the sirdar and slightly injuring the foreman. The bodies of the deceased were recovered some 15 hours later. The combined fall measured 14′×10′×4′ and would weigh at least 20 tons. Inspection and inquiry made.
29	7th August, 11 30 A.M.	Aldih mine, Sitarampur P. O., Bengal.	Aldih Coal Co., Ld.	Somi Mejhian, (*f.*), 25, *Coal-carrier.*	Coal	A triangular piece of ovarhanging coal, measuring 3′ 0″×2′ 0″×1′ 0″, fell from a 'slip' at a height of 13 feet on to deceased who was passing underneath it carrying a basket of coal on her head. She sustained a fracture of her right arm and died two hours later. Inspection and inquiry made.
30	18th August, 1-30 P.M.	Kongon mine, Kongon P. O., Assam.	Nazira Coal Co., Ld.	Twilla Hasda, (*m.*), 30, *Coal-cutter.*	Coal	Whilst deceased was lying asleep near his working place in the mine, a piece of stone, 12″×12″×3″ fell upon his chest from a height of 6 feet. He sustained an internal injury and died two days later. Inspection and inquiry made.

31	20th August, 1 A.M.	Rajhara mine, Rajhara P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Gopla Dosad, (*m.*), 26, *Coal-cutter.*	Coal	Deceased was robbing coal from a split in a pillar in a fenced-off area. The sirdar removed him but he went back. The sirdar ordered him out and was going for assistance when a piece of coal, 11′ long ×3½′ wide ×3′ thick, fell from a 'slip' and pinned the deceased against the pillar, causing injuries to which he succumbed in two hours. Inspection and inquiry made.
32	7th September, 1 P.M.	Sudamdih mine, Bhujudih P. O., Bihar and Orissa.	Sudamdih Coal Co., Ld.	Mongal Bauri, (*m.*), 35, Haru Bauri, (*m.*), 39, *Coal-cutters.*	Coal	Three coal cutters and a female carrier were robbing a pillar of coal in a quarry under overhanging shaley roof. The roof fell, knocking out three props, and stone, 15′ ×4′ ×4′ fell on them. One coal cutter was killed instantly. Another died within two hours. The third coal cutter and the carrier were seriously injured. At the time of the accident the quarry was fenced off and no work had been done for three days owing to insufficiency of timber. Inspection and inquiry made. (*See Report, page 9.*)
33	10th September, 6 A.M.	Damudarpur mine, Nandi P. O., Bengal.	Bengal Coal Co., Ld.	Khette Baurin, (*f.*), 50, *Bailing coolie.*	Coal	The deceased woman, who had been bailing water, was resting at a cross road. Stone, measuring 9′×2′×5″ thick, fell upon her from the roof 8 feet above, and fractured her spine and right leg. She died within an hour. Inspection and inquiry made.
34	11th October, 9-30 P.M.	Kurhurbaree mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Company.	Gonga Manjhi, (*m.*), 30, *Coal-cutter.*	Coal	Deceased passed through a fence and cut coal from a prohibited portion of the pillar of coal which he had been ordered to cut. He released a large slab of roof stone adjacent to a fault, and a piece of this stone, weighing 2 tons, fell on him from a height of 7 feet. He was killed instantly. Inspection and inquiry made.
35	23rd October, 7 A.M.	Gambrala mine, Pind Dadan Khan P. O., Punjab.	Thakur Dass, Ramji Dass	Sher Khan, (*m.*), 42, *Coal-cutter.*	Coal	Deceased was killed by a fall of roof whilst working in a prohibited part of a longwall face.
36	30th October, 2-30 P.M.	Sitanala mine, Bhujudih P. O., Bihar and Orissa.	Bengal Coke and Coal Products, Ld.	Bidu Baurin, (*f.*), 13; Kodi Baurin, (*f.*), 30, *Coal-carriers.*	Coal	The gang to which the deceased belonged went through a fence and started to rob coal when a fall of roof stone took place. Bidu was killed instantly and Kodi received injuries from which she died three hours later. Inspection and inquiry made.
37	3rd November, 11-30 A.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Zai Yo Lyin, (*m.*), 34, *Miner.*	Lead-silver	Whilst deceased and two other miners were engaged in extending the timbering in a stope closely timbered with square sets, a mass of about one ton of ore fell upon the deceased, killing him instantly. Inspection and inquiry made.
38	26th November, 1-30 P.M.	Loyabad mine, Bansjora P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Ruggoo Rai, (*m.*), 35, *Carpenter.*	Coal	Deceased was fixing a fence at the edge of a goaf fall, preparatory to starting the extraction of the next pillar, when a fresh fall took place in the goaf. This knocked out a prop so that it struck him on the side of the head, killing him instantly. Inspection and inquiry made.
39	27th November, 2 P.M.	Jealgora (No. 2) mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Lathua Kole, (*m.*), 20, *Coal-cutter.*	Coal	Whilst dressing the roof deceased was killed by a fall of roof coal which came away from two converging 'slips'. He had been previously warned not to start dressing until the sirdar came to supervise the work, as the roof was known to be in a bad condition. Inspection and inquiry made.
40	10th December, 11-30 P.M.	Jainty Central mine, Karmatar P. O., Bihar and Orissa.	Jainty Central Colliery, Ld.	Karam Manjhi, (*m.*), 30, *Coal-cutter.*	Coal	Deceased, whilst walking along a tramming level, was buried under a mass of roof, measuring 30′×14′×3′ which fell without warning from a height of five feet. He was killed instantly. Inspection and inquiry made.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*a*) Fall of roof—*concld.*			
41	16th December, 8-30 A.M.	Dhobidih mine, Giridih P. O., Bihar and Orissa.	Bengal Giridih Coal Co., Ld.	Melo Mejhian, (*f.*), 19, *Coal-carrier.*	Coal	While deceased was sleeping in a gallery, 7 feet wide, she was killed by a mass of roof stone, measuring 11′ × 6′ 6″ × 1′ 9″ thick, which fell from a height of 5 feet from two converging 'slips.' Inspection and inquiry made.
42	29th December, 7-30 A.M.	Bansjora mine, Bansjora P. O., Bihar and Orissa.	Bansjora Coal Co., Ld.	Domi Rajwar, (*m.*), 35, *Coal-cutter.*	Coal	Deceased went into a quarry before the sirdar had made his inspection. While examining the roof at the mouth of an opening leading into the mine, a mass of coal, weighing about 3 tons, fell on him from two converging 'slips' in the roof. The roof had been propped, but the props had been knocked out. Deceased was killed instantly. Inspection and inquiry made.
43	30th December, 5-30 A.M.	Borrea mine, Kulti P. O., Bengal.	New Beerbhum Coal Co., Ld.	Maharaj Singh, (*m.*), 35, *Coal-cutter.*	Coal	Deceased, whilst levering down roof coal from a ladder in a prohibited area, was slightly injured by a fall of coal. He died shortly afterwards of heart failure. Inspection and inquiry made.
			FALLS OF SIDES—(*40 deaths*).			
44	24th January, 4 A.M.	Tikak mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Gorey Lama, (*m.*), 23, *Opening-man.*	Coal	Whilst three miners were working in an 'opening' 39′ × 36′ × 18′ high, a mass of coal fell without warning from a 'slip', killing deceased instantly and injuring the two other men. Inspection and inquiry made.
45	28th January, 6 P.M.	Hsaikho (Mile 28·6) mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Shauk Lu, (*m.*), 35, Li Wee, (*m.*), 28, Whe San, (*m.*), 33, Tan Yin Kawng, (*m.*), 30, Whe San, (*m.*), 33, *Earth-cutters.*	Limestone	A gang of eight earth cutters was engaged in stripping overburden from a hill side in preparation for limestone quarrying. The excavation was 25 feet in depth, and a conical measurement pillar, 20′ high × 1′ to 10′ diameter, had been left unworked. Recent rain had softened the ground, and a mass of several tons of clay fell from the pillar. Five men were killed instantly and the three others were slightly injured. Inspection and inquiry made.
46	31st January, 3 P.M.	Joyrampore mine, Jharia P. O., Bihar and Orissa.	Jainarayan Ramjash Agarwalla.	Balamati Chamarin, (*f.*), 35, *Coal-carrier.*	Coal	Whilst a miner was taking down overhanging coal from a pillar in a seam, 25 feet thick, a mass of coal, weighing about 8 tons, fell prematurely from a height of 15 feet. Deceased, who was loading coal at the place, was struck by the falling coal and killed instantly. Inspection and inquiry made.

47	7th February, 10 A.M.	Bhalgora mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., Ltd.	Akal Kanu, (*m.*), 24, *Coal-cutter.*	Coal	A miner's sirdar dislodged a mass of overhanging coal from the corner of a pillar under extraction. In falling, the coal, weighing about 1 ton, dislodged a prop, 26 feet long. The end of the falling prop struck deceased on the head killing him on the spot. Inspection and inquiry made.
48	19th February, 7 A.M.	Sonalibad mine, Jharia P. O., Bihar and Orissa.	Ramjash Agarwalla	Tarwar Bilaspuri, (*m.*), 50, *Coal-cutter.*	Coal	Deceased entered an area of disused and fenced-off workings, and began to cut coal from the corner of a pillar in a gallery, 40 feet in height. A mass of coal, weighing about 50 tons, fell from a 'slip,' at a height of about 20 feet. He was struck by some of the falling coal and killed on the spot. Inspection and inquiry made.
49	2nd March, 12 Noon.	Meru mine, Hazaribagh P. O., Bihar and Orissa.	Gopi Chand Seth	Ghuta Koiri, (*m.*), 25, Dhania Koiri, (*m.*) 22, *Miners.*	Mica	Whilst deceased were working in a quarry about 20 tons of soft overburden fell upon them from the side at a height of 12 feet. They were killed on the spot. Two other persons were injured. Inspection and inquiry made.
50	10th March, 12 Noon.	Sowardih mine, Sudamdih P. O., Bihar and Orissa.	Sowardih Coal Co., Ltd.	Kunja Hari, (*m.*) 45, *Coal-cutter.*	Coal	Deceased was employed in cutting floor coal in a quarry. He undercut at the foot of a bench of coal, 5 feet in height, and brought about the fall of about 1 ton of coal and *debris*. He sustained injuries to which he succumbed later in the day. His wife, who carried coal for him, was slightly injured. Inspection and inquiry made.
51	23rd March, 9 A.M.	Jamadoba (No. 1 Division) mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ltd.	Dinu Bauri, (*m.*), 45, *Coal-cutter.*	Coal	Deceased and three other coal cutters were engaged in taking out a pillar of coal in a seam, 12 feet thick. He undermined a corner of the pillar and brought about the fall of a mass of coal, weighing about 30 cwts., from a height of 6 feet. He was struck by the falling coal. His injuries were such that he died a few minutes later. Inspection and inquiry made.
52	5th April, 12-30 P.M.	South East Baraboni mine, Charanpur P. O., Bengal.	Maharaja of Cassimbazar	Etwari Chamar, (*m.*), 35, *Coal-cutter.*	Coal	Deceased was standing on a stool cutting overhanging coal from a pillar in course of extraction, when a mass of coal, weighing about 4 tons, broke away from a concealed 'slip' at a height of 8 feet. He was knocked off the stool and struck on the head by a portion of the coal, and died fourteen hours later. Inspection and inquiry made.
53	6th April, 1 P.M.	Sudresdih mine, Nowagarh P. O., Bihar and Orissa.	Jainarayan Ramjash Agarwalla.	Rakhal Hari, (*m.*), 25, *Coal-cutter.*	Coal	Deceased undercut the face of a quarry and brought about the fall of a mass of overburden, 19′ × 3′ × 3′ from a height of 3½ feet. He sustained injuries to which he succumbed shortly afterwards. Inspection and inquiry made.
54	9th April, 3 P.M.	Singho-Buria mine, Tisri P. O., Bihar and Orissa.	F. F. Chrestien and Co., Ltd.	Lalo Gope, (*m.*), 22, *Mica dresser.*	Mica	Deceased was one of a gang of workers engaged in picking out mica from a dump. Whilst at work at the bottom of a pit, 3 feet wide and 15 feet deep, he was buried by *debris* which slipped down from the sides of the pit. Before he could be rescued he died from suffocation. Inspection and inquiry made. (*See Report, page 9.*)
55	23rd April, 1-30 P.M.	Chasnalla mine, Bhojudih P. O., Bihar and Orissa.	Lodna Colliery Co., Ltd.	Khudi Baurin, (*f.*), 29, *Coal-carrier.*	Coal	A mass of coal, measuring 12′ × 8′ × 0″ to 4′ 6″, fell from the side of a gallery, at a height of 12′ feet. Deceased was struck by the falling coal and succumbed to her injuries about three hours later. The fall was caused by coal-cutters attempting to rob coal from the side. Inspection and inquiry made.
56	23rd April, 4 P.M.	Kajora mine, Ondal P. O., Bengal.	H. N. Pal Choudhury	Ram Kisan Rewani, (*m.*), 26, *Contractor's assistant.*	Coal	The deceased was sitting on top of the partially constructed masonry lining of a sinking shaft when a portion of the side, weighing about 1½ cwt., broke away and fell on to him from a height of three feet. He was knocked off the wall and fell a distance of ten feet to the shaft bottom, sustaining serious injuries to the spine. He died eighteen days later. Inspection and inquiry made.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*b*) **Fall of side**—*contd.*			
57	5th June, 2 P.M.	Namdang mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Jogiram Chetri, (*m*), 40, *Coal-filler.*	Coal	Whilst deceased was shovelling coal in an 'opening' or chamber a small piece of coal fell from the roof and struck him on the foot, causing a severe contusion. He died in hospital from gangrene two months later. Inspection and inquiry made.
58	15th June, 1 P.M.	Patlabari mine, Barakar P. O., Bihar and Orissa.	Kumardubi Fireclay and Silica Works, Ld.	Lokhi Mejhian, (*f*), 38, *Coolie.*	Fireclay	Deceased went into a disused quarry to pick up some loose fireclay. A portion of the side, weighing about 3 cwt., broke away and fell upon her from a height of 4½ feet. She was fatally injured. Inspection and inquiry made.
59	2nd July, 3-30 P.M.	Kenda mine, Toposi P. O., Bengal.	Banerjee Santan	Sambhu Bauri, (*m*), 26, *Coal-cutter.*	Coal	Deceased went into a fenced area and began to break down coal which was already undercut when a mass of coal, weighing about 5 tons, fell on him from a height of 10 feet. He received injuries from which he died three hours later. Inspection and inquiry made.
60	11th July, 6 A.M.	Jamadoba (No. 1 Division) mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Melo Mejhain, (*f*), 19, *Coal-carrier.*	Coal	Deceased, with other miners, entered a fenced-off area for the purpose of robbing coal. About two tons of coal fell from the top of a pillar. One piece, about 1′ 6″ × 1′ × 9″, striking her on the back, killed her instantly. Inspection and inquiry made.
61	18th July, 7-30 A.M.	Saltore mine, Dishergarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Thakurmani Mejhian, (*f*), 22, Puni Korah, (*f*), 35, *Coal-carriers.*	Coal	The deceased and another woman were loading machine-cut coal which had been blasted down from the side of a pillar. A mass of coal, weighing about 10 cwts., broke away from the side of the pillar and fell upon them. The deceased were killed and the other woman sustained serious injuries. Inspection and inquiry made.
62	22nd July, 9-30 A.M.	Parbelia mine, Dihsergarh P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Isaac Edwards, (*m*), 31, *Overman.*	Coal	Deceased was in the sump of a sinking shaft, 1,440 feet in depth, when a piece of stone fell from the side of the shaft and knocked off his helmet. Before he could replace it, another piece of stone, measuring 9″ × 6″ × 4″ fell and struck him on the head, fracturing his skull. He died 7½ hours later. Inspection and inquiry made. (*See Report, page 10.*)
63	22nd July, 10 A.M.	Alkusa and Kiska mine, Kusunda P. O., Bihar and Orissa.	Kanga & Co.	Tiloo Mallick, (*m*), 35, *Coal-cutter,* Khemi Mallick, (*f*), 25, *Coal-carrier.*	Coal	The deceased left their working place and began to rob coal from the side in another gallery. A mass of coal fell from the side killing them instantly. Another miner, who was cutting floor coal at the time, was injured. Inspection and inquiry made.
64	21st August, 11 A.M.	Tilana mine, Ajmer P. O., Rajputana.	Seth Sita Ram	Chatar Daranga, (*m*), 35, *Coolie.*	Mica	Deceased, during the midday rest, went into a disused mine, and commenced to cut out a 'book' of mica. A piece of stone fell from a height of a few feet and struck him on the arm, cutting a blood-vessel. He died from loss of blood several hours later. Inspection and inquiry made.

65	27th August, 3 P.M.	Ledo mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Nokaya Mala, (*m.*), 25, *Coal-shoveller*	Coal	Deceased was employed in shovelling coal in a narrow road which was timbered. He was buried by a mass of coal, 5′×4′×2′, which fell from the side knocking out two settings of timber. Inspection and inquiry made.
66	1st September, 5-45 A.M.	Katras mine, Katrasgarh P. O., Bihar and Orissa.	Nowagarh Coal Co., Ltd.	Nanku Meah, (*m.*), 20, *Coal-cutter.*	Coal	Deceased, with his father, entered a fenced area in order to rob coal. The pillars in this area were crushed and a mass of coal, 6′×4′×2′, fell upon him causing injuries to which he succumbed shortly after. Inspection and inquiry made.
67	2nd September, 2 P.M.	Bhaswakola mine, Rajauli P. O., Bihar and Orissa.	Bal Mukund Sahai	Sunkar Gope, (*m.*), 25, *Coolie.*	Mica	Deceased was killed and two other persons were injured by a fall of side in a shallow prospecting pit.
68	8th September, Between 3 and 11 P.M.	Thondaung mine, Maymyo, Burma.	Burma Corporation, Ltd.	Two unknown Burmen.	Iron Ore	Deceased were killed by a fall of earth in a railway cutting.
69	30th September, 10-30 P.M.	Damaghurria mine, Kulti P. O., Bengal.	Damaghurria Coal Co., Ltd.	Mohan Manjhi, (*m.*), 40, *Coal-cutter.*	Coal	Deceased had been cutting floor coal. He went through a fence into a gallery, 20 feet distant, to dress the side of a pillar. A mass of some twelve cwts. of coal came away from a stone parting and fell on him. He died two hours later. Inspection and inquiry made.
70	27th October, 10 A.M.	Kalonta mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ltd.	Karaka Bahadur, (*m.*), age unknown, *Coolie.*	Wolfram	Whilst at work in an open cut, where working had been prohibited, deceased was killed by a fall of overburden.
71	5th November, 2 P.M.	Jealgora mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ltd.	Phulari Bauri, (*m.*), 30, *Coal-cutter*	Coal	Deceased went through a fence to rob coal from the side of a pillar, and whilst engaged in pulling down coal with a short piece of rail, some of the coal fell upon him, killing him instantly. Inspection and inquiry made.
72	7th December, 12 P.M	Ena mine, Jharia P. O., Bihar and Orissa.	North West Coal Co., Ltd.	Hulu Chamar, (*m.*), 30, *Coal-cutter.*	Coal	Deceased with five other miners was engaged in the extraction of a pillar of coal. He undercut the pillar and caused a mass of coal, about 6′×3′×1½′ thick, to fall from a 'slip.' The coal fell upon him, causing injuries from which he died about 15 hours later. Inspection and inquiry made.
73	7th December, 4 P.M.	Ekra mine, Bansjora P. O., Bihar and Orissa.	Maharaja of Cassimbazar	Dukan Chamar, (*m.*), 45, *Coal-cutter.*	Coal	Deceased went through a fence to rob coal from the corner of a pillar, and brought down upon himself some 2 tons of side coal from a height of 20 feet. He was injured so seriously that he died about an hour afterwards. Inspection and inquiry made.
74	18th December, 12 NOON.	Dhemo Main mine, Sitarampur P. O., Bengal.	Dhemo Main Collieries, Ld.	Gopal Singha, (*m.*), 46, *Assistant manager.*	Coal	Deceased when in the act of getting into a bucket at the bottom of a shaft, 1,146 feet in depth, was struck on the head by a piece of stone which fell from the side of the shaft. He sustained a fracture of the skull and died half an hour later. Inspection and inquiry made. (*See Report, page 10.*)
75	29th December, 8-30 P.M.	Tikak Lower mine, Margherita P. O., Assam.	Assam Railways & Trading Co., Ltd.	Dalbahadur Thakuri, (*m.*), 26, *Coal-tunner.*	Coal	Deceased was working near the back rib in an 'opening' or chamber when a 'bump' caused about 5 tons of coal to drop from a concealed 'slip.' One piece, weighing about ¼ cwt., fell on the head of deceased, causing injuries to which he succumbed almost immediately. Inspection and inquiry made.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			IN SHAFTS—(*44 deaths*).			
			Overwinding—(*2 deaths*).			
76	1st July, 3-30 P.M.	Seebpur mine, Charanpur P. O., Bengal.	Katras Jharia Coal Co., Ld.	Biraj Manjhi, (*m.*), 36, *Coal-cutter*; Sukhi Mejhian, (*f.*), 25, *Coal-carrier.*	Coal	Whilst persons were being raised and lowered in a shaft, 350 feet in depth, the winding engine got out of control. The ascending cage, containing the deceased persons, was overwound and held by the detaching hook. Before the engine could be brought to a standstill, the rope, attached to the descending cage in which an injured person was riding, coiled on the drum in the opposite direction and raised the cage some distance above the shaft bottom until it became detached by the jerk and released the cage which fell heavily on the shaft bottom. The deceased persons were fatally injured and one other person was seriously injured. Subsequent to the accident a loose nut was found between the steam regulator valve and its seating. This caused the accident by preventing the engineman from closing the valve during the wind. Inspection and inquiry made.
			IN SHAFTS—ROPES AND CHAINS BREAKING—(*1 death*).			
77	21st January, 2-50 P.M.	Sijua mine, Sijua P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Lakhi Singh, (*m.*), 23, *Pump-khalassie.*	Coal	Deceased was on a pump scaffold near the bottom of a sinking shaft. This was apparently unknown to two men who were fixing pipes in the shaft. Whilst these men were raising some pipes from the bottom of the shaft the winch rope broke and deceased was struck on the head and died on the next day. Inspection and inquiry made.
			IN SHAFTS—WHILE ASCENDING OR DESCENDING BY MACHINERY—(*18 deaths*).			
78	10th January, 4-30 P.M.	Patlabari mine, Chirkunda P. O., Bihar & Orissa.	Chela Panchan and Sons	Bhade Manjhi, (*m.*), 27, Odhava Bauri, (*m.*), 22, *Pump-khalassies*	Coal	The deceased persons were being raised in a pumping shaft by a crab winch. When they were nearing the top of the shaft the rope broke and they fell a distance of 100 feet into water in the shaft bottom. Their bodies were recovered four days later. Inspection and inquiry made.
79	30th January, 4-30 A.M.	Parbelia mine, Dishergarh P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Nathu Singh, (*m.*), 32, *Head fitter*; Ganesham Gope, (*m.*), 25, Khairo Maujhi, (*m.*), 28, Madhu Singh, (*m.*), 27, *Sinking Sirdars.*	Coal	The stage in a sinking shaft, 1,350 feet in depth, had been lowered a distance of 40 feet to a total depth of 1,260 feet. The signal was given to lower the bucket which was hanging in the shaft 10 feet above the stage. The winding engineman started his engine, lost control of it and ran away. In consequence the bucket was dashed on to the bottom of the shaft. The spare rope on the drum was unwound, the end of the rope broke away from the drum, and 1,500 feet of winding rope fell down the shaft. The deceased who were in the bucket and on the stage, superintending the lowering of the stage, were killed instantly. Inspection and inquiry made.

80	8th March, 10-30 A.M.	Chinchuria mine, Asansol P. O., Bengal.	New Beerbhum Coal Co., Ld.	Kunju Muchi, (*m.*), 35, *Underground pumpman.*	Coal	Deceased was descending a shaft, 400 feet in depth. The cages collided at the meetings and he was thrown out and fell a distance of 200 feet to the shaft bottom and killed instantly. The cages were not fitted with gates. Inspection and inquiry made. (*See Report, page 10.*)
81	18th September, 7 P.M.	Bawdwin Mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Law Mein, (*m.*), Law Mein, (*m.*), Leo Shew Kway, (*m.*), Kow Pyu Yone, (*m.*), Law Swain, (*m.*), *Miners*; Law Tai, (*m.*), Yan Pin Kyone, (*m.*), Wong Pan, (*m.*), Law Kyow, (*m.*), Law Kyam, (*m.*), *Shovellers*; Hoo Shan Kyee, (*m.*), *Trucker.*	Lead-silver	Whilst ten persons were being lowered in a cage in a vertical shaft, 543 feet deep, the cage jammed in the wooden guides. The engineman continued to lower the rope, and loose coils of it projected into the adjacent compartment of the shaft and were caught by the ascending cage. The contact was sufficient to release the jammed cage, but it fell again to the limit of the slack rope. The resulting jerk broke the clamps of the thimble capping by which the rope was attached to the cage. The cage fell to the shaft bottom, killing all its occupants and another man who, happened to be looking up the shaft from an intermediate level. Safety-catches were attached to the cage, but they failed to come into action. Inspection and inquiry made. (*See Report, page 11.*)
			IN SHAFTS—FALLING INTO THE SHAFT FROM THE SURFACE—(*3 deaths*).			
82	2nd February, 11 A.M.	Square 16(*c*) mica mine, Kodarma P. O., Bihar and Orissa.	Lakshmi Narayan Sukhani	Rahan Gope, (*m.*), 20, *Miner.*	Mica	Deceased was crossing a hillside, honeycombed with old prospecting pits. The top of one of these pits, 16 feet deep and 3′ 6″ in diameter, was covered with *debris*, which broke down with his weight. He fell to the bottom of the shaft and was covered up by *debris* which fell after him. When the body was recovered about 1½ hours later it was found that death had been caused by suffocation. Inspection and inquiry made.
83	8th May, 6-30 A.M.	Kandri mine, Ramtek P. O., Central Provinces.	Central Provinces Prospecting Syndicate, Ld.	Mansook Padama, (*m.*), 35, *Miner.*	Manganese	Whilst at work getting ore in a quarry deceased fell into a winze, 80 feet deep, and was killed instantly.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			IN SHAFTS—FALLING INTO THE SHAFT FROM THE SURFACE—*contd.*			
84	15th September, 7-30 A.M.	Pandaveswar mine, Pandaveswar P. O., Bengal.	Highfield Colliery, Ld.	Jhalka Manjhi, (*m.*), 25, *Hookman.*	Coal	Deceased, a surface hookman, whilst assisting to land a bucket on the trolley at the top of a sinking shaft, stepped off the trolley into a gap formed between the trolley and the side of the shaft. He fell to the bottom of the shaft sustaining a fracture of the base of the skull, death being instantaneous. Inspection and inquiry made. (*See Report, page 11.*)
			IN SHAFTS—FALLING INTO THE SHAFT FROM PART OF THE WAY DOWN—(*4 deaths*).			
85	19th March, 9 P.M.	Central Kurkend mine, Kusunda P. O., Bihar and Orissa.	Central Kurkend Coal Co., Ld.	Ramcharan Barhi, (*m.*), 25, *Shaft-sinker.*	Coal	Deceased was one of a gang of 12 men who were drilling shot holes at the bottom of a sinking shaft, 446 feet deep. Having finished drilling he climbed up on to a pump suspended about 10 feet above the shaft bottom, where he obtained shelter from water dropping from above. It is presumed that he dozed, for, about half an hour later he fell to the shaft bottom. His knee was injured and the wound became septic. He died four days later. Inspection and inquiry made.
86	7th May, 5-30 A.M.	Angarpathra mine, Katrasgarh P. O., Bihar and Orissa.	National Coal Co., Ld.	Rajeswar Gope, (*m.*), 22, *Chargeman.*	Coal	The deceased was being lowered down a sinking shaft, 130 feet deep. His foot appears to have slipped out of the loop at the end of the rope, which was being lowered by hand. He fell some 50 feet to the shaft bottom. His legs were broken above the ankle, and he died five hours later. Inspection and inquiry made.
87	2nd September, 7-15 P.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Loa Yan, (*m.*), *Shweller.*	Lead-silver.	Deceased was climbing a ladder, 15 feet long, inclined at an angle of 1 in 4, and leading to a stope where he worked. He was carrying a shovel in one hand and a candle lantern in the other. He fell from the ladder and through the opening in the platform below to the foot of a lower ladder, 28 feet long. He sustained a fracture of the base of the skull and died on the way to hospital. Inspection and inquiry made. (*See Report, page 12.*)
88	15th October, 1 P.M.	Palmani mine, Sydapuram P. O., Madras.	W. A. Beardsell & Co.	Badiwal Subba Reddi, (*m.*), 38, *Hand-jumper coolie.*	Mica	Whilst climbing a ladder in a vertical shaft, deceased slipped and fell to the bottom, 45 feet below. He succumbed to his injuries shortly after.
			IN SHAFTS—THINGS FALLING FROM THE SURFACE—(*4 deaths*).			
89	9th January, 4 A.M.	Purusathampur mine, Pandeveswar P. O., Bengal.	Tata Iron & Steel Co., Ltd.	Kadu Meah, (*m*), 30, *Sinking Sirdar.*	Coal	A bucket of *debris* and water was being raised from the bottom of a sinking shaft, 270 feet in depth. On reaching the surface the bucket was swung out towards the shute, and the catches were opened for the bucket to be emptied. Before it was emptied, the winding engineman raised the bucket and, as he catches were open, the contents of the bucket were tipped into the shaft. A piece of stone struck deceased in the shaft bottom and killed him instantly. Inspection and inquiry made. (*See Report, page 12.*)

90	22nd March, 5 P.M.	Mudidih mine, Sijua P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Dhanu Singh, (*m.*), 35, *Sinking Sirdar.*	Coal	Whilst a gang of seven sinkers was at work at the bottom of a sinking pit, 290 feet deep, an overwind took place. A loaded bucket was drawn up into the headgear, and its impact dislodged a steel girder, 10 feet 7 inches in length, which fell to the bottom of the shaft, and killed deceased. Inspection and inquiry made. (*See Report, page 12.*)
91	15th May, 8-30 A.M.	Mudidih mine, Sijua P. O., Bihar and Orissa.	Burrakur Coal Co., Ltd.	Behari Teli, (*m.*), 32, *Pit-sinker.*	Coal	Deceased and three others were at the bottom of a sinking shaft, 348 feet deep, for the purpose of ladling water into a bucket. A brick fell down the shaft and struck deceased on the head, killing him instantly. There was suspicion that somebody had thrown the brick into the shaft, but no evidence of this was obtained. Inspection and inquiry made.
92	29th September, 5-30 P.M.	Lakurka mine, Katrasgarh P. O., Bihar and Orissa.	Lakurka Coal Co., Ltd.	Mahadeo Suri, (*m.*), 16, *Coal-cutter.*	Coal	Whilst adjustments at the top of a head gear were in progress, a piece of round timber, 3" diameter and 5'-6" in length, which was being used as a lever, slipped from the hands of a coolie, and fell down the shaft. In falling, it glanced off the side of the shaft into the mouth of a gallery at the shaft bottom, 221 feet below. Deceased, who was sitting there, was struck on the head and sustained injuries which caused death ten hours later. Inspection and inquiry made.
			IN SHAFTS—THINGS FALLING FROM PART OF THE WAY DOWN—(*2 deaths*).			
93	8th January, 1 P.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ltd.	Bhaglow Myan, (*m.*), 30, *Sinker.*	Coal	Whilst deceased with 16 other persons was at work at the bottom of a sinking shaft 240 feet deep, a piece of stone, weighing about 5 lbs., fell upon his head and killed him instantly. The stone fell from the side of the shaft, but the particular place from which it fell could not be detected. Inspection and inquiry made.
94	11th September, 11 A.M.	Nandlagunta mine, Sydapuram P. O., Madras.	W. A. Beardsell & Co.	Rapur Subbie, (*f.*), 14, *Carrier.*	Mica	Debris was being raised in buckets at a windlass shaft. The empty bucket in descending fouled the loaded bucket, and became detached from the rope. It fell upon the deceased injuring her fatally.
			IN SHAFTS—MISCELLANEOUS—(*10 deaths*).			
95	11th January, 4 A.M.	Kirkend mine, Kusunda P. O., Bihar and Orissa.	Kirkend Coal Co.	Miton Bauri, (*m.*), 38, *Coal-cutter.*	Coal	Deceased, whilst attempting to cross the bottom of a shaft, was knocked down and killed instantly by the descending cage. Inspection and inquiry made.
96	28th January, 1 P.M.	Bhalgora mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., Ld.	Barhon Meah, (*m.*), 26, *Onsetter.*	Coal	Deceased whilst attempting to cross the bottom of a shaft instead of going round by the road provided, was struck by the descending cage and killed instantly. Inspection and inquiry made.
97	3rd February, 8 P.M.	Gaslitan mine, Sijua P. O., Bihar and Orissa.	New Manbhum Coal Co., Ld.	Chattu Pathak, (*m.*) 34, *Munshi.*	Coal	Deceased whilst attempting to cross the bottom of a shaft was crushed by the descending cage. He sustained injuries to which he succumbed shortly after. A proper pass-bye was provided. Inspection and inquiry made.
98	17th February, 9 P.M.	Hatgarooie mine, Sitarampore P. O., Bengal.	Burrakur Coal Co., Ld.	Palu Meah, (*m.*) 35, *Onsetter.*	Coal	Deceased, whilst attempting to cross the bottom of a shaft was struck by the descending cage and killed instantly. A travelling road around the shaft was provided. Inspection and inquiry made.
99	31st March or 1st April, between 7 P.M. and 6 A.M.	Bhuggutdih mine, Jharia P. O., Bihar and Orissa.	Bengal Nagpur Coal Co., Ld.	Panu Bauri, (*m.*), 36, *Sirdar.*	Coal	Deceased was found dead at the bottom of a cage pit, 321 feet deep. His injuries were such as might have been caused by a fall from the surface or from the cage. Inspection and inquiry made.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			IN SHAFTS—MISCELLANEOUS—*contd.*			
100	3rd April, 7-30 P.M.	Central Jamehari mine, Raniganj P. O., Bengal.	Central Jamehari Coal Co., Ld.	Kanker Rajwar, (*m.*), 30, *Sinker.*	Coal	Deceased was being raised by hand out of a sinking shaft, 72 feet in depth, when a mass of soft strata, weighing about 5 cwts., fell from the side of the shaft and struck him, causing him to let go of the rope and fall a distance of 54 feet to the bottom of the shaft. He was killed instantly. Inspection and inquiry made.
101	16th April, 3-30 A.M.	Parbelia mine, Dishergarh P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Ram Manjhi, (*m.*), 28, *Sinker.*	Coal	A sinking bucket full of *debris* was being steadied preparatory to being raised from a shaft bottom. Deceased, who was loading another bucket, stumbled and fell against the first one which was spinning round. His head came into contact with the handle of the bucket and he was killed instantly.
102	3rd June, 12-15 P.M.	Harriladih mine, Jharia P. O., Bihar and Orissa.	Equitable Coal Co., Ld.	Rudu Gope, (*m.*), 34, *Sinker.*	Coal	Deceased was one of a gang of men employed in putting down a borehole in the bottom of a sinking shaft, 390 feet deep. Whilst they were at work, a water barrel was lowered, and deceased did not get out of the way quickly enough. He was struck on the head, sustaining injuries which resulted in death on the following day. Inspection and inquiry made.
103	6th August, 6-15 A.M.	Gopalichuck West mine, Bansjora P. O., Bihar and Orissa.	Gopalichuck Coal Co., Ld.	Adu Singh, (*m.*), 32, *Pump-khalasie.*	Coal	Deceased went down a shaft, 365 feet deep, in a bucket to adjust a pump slung in the shaft. The atmosphere was hot and steamy. He was overcome by the heat, dropped into the water, and was drowned. Inspection and inquiry made. (*See Report, page 13.*)
104	25th December, 2 P.M.	Ghorawadi mine, Jamai P. O., Central Provinces.	S. Shahabuddin and Sons.	Rukhia, (*f.*), 17, *Labourer.*	Coal	Whilst at work in a coal quarry, deceased was killed by the fall of a tree on the edge of the quarry.
			SUFFOCATION BY GASES—(*8 deaths*).			
105	18th June, 8-0 A.M.	Burria Domchanch mine, Domchanch P. O., Bihar and Orissa.	F. F. Chrestien and Co., Ld.	Mulia Gope, (*m*), 20, Ugar Dhobi, (*m*), 20, *Pump-khalasies;* Sanichar Singh, (*m*), 18, *Coolie.*	Mica	Two men were being lowered in a bucket, 19" diameter by 20" deep, into a disused shaft, 120 feet deep, for the purpose of bailing water at the bottom. At a depth of 24 feet they were overcome by blackdamp and before they could be raised to the surface, they released their hold of the rope and fell to the shaft bottom. A third man went to the rescue and suffered the same fate in a similar manner. When the bodies of deceased were brought to the surface their skulls were found to be fractured. Inspection and inquiry made.

106	13th September, 4 P.M.	Bhalua mine, Domchanch P. O., Bihar and Orissa.	F. F. Chrestien and Co., Ld.	Shan Singh, (*m*), 36, Hular Dosad, (*m*) 40, Bhatu Turi, (*m*), 26, Bhatu Kamar, (*m*), 30, *Miners.*	Mica	The deceased were employed in prospecting for mica. They descended a disused shaft, 22 feet deep. Owing to the presence of foul air in the shaft they were overcome and died of suffocation. Inspection and inquiry made.
107	30th December, 10 A.M.	Bagdigi mine, Jharia P. O., Bihar and Orissa.	C. J. Smith	Lakhi Ram Bauri, (*m*), 18, *Earth-cutter.*	Coal	While engaged in clearing out an old air shaft, in proximity to an under ground fire, the soft earth forming the bottom of the shaft gave way, causing deceased to slip into a gallery which was full of blackdamp. Deceased was asphyxiated before he could be rescued. Inspection and inquiry made. (*See Report, page 13.*)
			BY EXPLOSIVES—(*12 deaths*).			
108	17th February, 9 P.M.	Barkui mine, Pench P. O., Central Provinces.	Pench Valley Coal Co., Ld.	Noor Khan, (*m*), 14, *Shotfirer's assistant.*	Coal	Deceased went to sleep in a mine near a wooden chest, in which a leather bag containing 5 lbs of gunpowder had been placed. The gunpowder exploded and he sustained severe burns, which resulted in death on the following day. It is probable that he had placed his lamp near the box and thus ignited the gunpowder.
109	4th March, 2-0 A.M.	Kandri mine, Ramtek P. O., Central Provinces.	Central Provinces Prospecting Syndicate, Ld.	Gariba, (*m*), 29, *Miner.*	Manganese	Deceased, in violation of the rules, commenced drilling in an old shot-hole. An explosion took place, and he sustained injuries which resulted in death a few days later. There was probably some dynamite in the old hole which had not been detonated when the previous shot was fired.
110	12th March, 3 P.M.	Serampore mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Co.	Chota Keso Gope, (*m*) 25, *Stone-cutter.*	Coal	The deceased and a dynamite carrier, although not authorized to fire shots, were preparing to fire shots in a heading which was within three feet of connection with another heading. In this second heading shots had been fired about 20 minutes before, and a missfire had occurred. An explosion took place, killing deceased and seriously injuring the other man. Inspection and inquiry made.
111	11th April, 3 P.M.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Chong Kee, (*m*), 40, *Dump-picker.*	Wolfram	The deceased was employed in picking out ore from a waste dump, and was not authorized to work in an adit or to have or use explosives. Without permission, he entered an old adit and charged a shot there. The charge hung fire, but exploded when he had returned to the place. He sustained injuries which resulted in death on the following day.
112	24th July 1920, 3-30 P.M.	Bhajipani mine, Pench P. O., Central Provinces.	Pench River Coal Co., Ld.	Mandhir Kole, (*m*), 18, *Coal-cutter.*	Coal	Deceased, although not authorized to fire shots, obtained gunpowder cartridges and stemmed two shot holes in the absence of the shotfirer. He accidentally lit a third cartridge which he was holding in his hand. The cartridge exploded and inflicted severe burns to which he succumbed six days later. Inspection and inquiry made.
113	6th August, 9 A.M.	Saltore mine, Dishergarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Durga Pasi, (*m.*), 35, *Coal-cutter.*	Coal	Deceased was drying a quantity of loose gunpowder near a fire when it became ignited and exploded. He was seriously burnt about the upper part of the body and died four days later. Inspection and inquiry made.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			BY EXPLOSIVES—*contd.*			
114	16th August, 5 P.M.	Alkusa South mine, Kusunda P. O., Bihar and Orissa.	Raniganj Coal Association, Ld.	Hiraman Suri, (*m.*), 3, *Not employed*; Jaganath Bania, (*m.*), 38, *Coal-cutter*; Sahaban Meah, (*m.*), 36, *Not employed.*	Coal	A mining sirdar was making up loose gunpowder into paper cartridges, and some 5 lbs. or more of the powder was spread out to dry in a shed, when a spark from a fire in the vicinity of the shed ignited it and caused a severe explosion. The sirdar and two other persons were killed and three persons were injured. Inspection and inquiry made. (*See Report, page 13.*)
115	21st November, 12 NOON.	Norongo mine, Giridih P. O., Bihar and Orissa.	J. S. Mull & Co.	Rohan Rai, (*m.*), 25, Teko Rai, (*m.*), 23, *Machine drillers.*	Tin	Whilst deceased were boring a hole with a machine drill they detonated a cartridge of dynamite which had been left in a previous hole. Rohan was killed instantly and Teko received injuries from which he died next day. Another man was injured. Inspection and inquiry made.
116	6th December, 5-30 P.M.	Dongor Chikli mine, Peach P. O., Central Provinces.	Central Pench Coal Co., Ld.	Gunpat Lohar, (*m.*). 30, *Shot firer.*	Coal	Deceased, an experienced shot firer, having lit the fuse of a shot in a gallery, went into the next gallery carrying four gunpowder cartridges in his hand. The cartridges exploded and he was severely burnt. He died 8 days later. Inspection and inquiry made.
			IRRUPTION OF WATER OR FALLING INTO WATER —(*8 deaths*).			
117	4th August, 8-30 P.M.	Namma mine, Namtu, Northern Shan States, Burma.	Burma Corporation, Ld.	Affiodeen, (*m.*), 42, *Pump-driver*; Law San, (*m.*), 21, Ai Ko, (*m.*), 22, Fa Hin In, (*m.*), 30, Paw Sin Maw, (*m.*), 38, Ai See, (*m.*), 36, Far Wee, (*m.*), 38, Ai Hue, (*m.*), 32, *Coal-cutters.*	Coal	The deceased were at work in an inclined shaft, 998 feet in length, on a slope of 42°. During heavy rain an irruption of water took place *via* an abandoned tunnel which connected with a shaft near the surface. They were drowned. Inspection and inquiry made. (*See Report, page 14.*)

HAULAGE—(*16 deaths.*)

118	8th January, 12-30 P.M.	Bhowra mine, Jamadoba P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Rutoo Koiri, (*m.*), 14, *Coal-carrier.*	Coal	Deceased was loading coal into some tubs standing at a curve, when the tubs moved forward owing to the increased weight caused by the filling of some tubs behind them, which were standing on a heavy gradient, and when the front tubs were stopped the weight of those behind forced two tubs off the line at the curve. One of these tubs struck deceased and killed him. Inspection and inquiry made.
119	9th January, 5-30 P.M.	Tisra mine, Jharia P. O., Bihar and Orissa.	Tisra Colliery, Ld.	Nuni Baurin, (*f.*), 45, *Coal-carrier.*	Coal	Deceased was loading coal into tubs on a main dip loading siding when a set of nine empty tubs ran wild owing to the breaking of a drawbar. The body of one of these tubs was thrown off its frame. It struck deceased and killed her instantly. Inspection and inquiry made.
120	23rd February, 9 P.M.	Nunidih mine, Jamadoba P. O., Bihar and Orissa.	Bengal Iron Co., Ld.	Kali Manjhi, (*m.*), 20, *Hookman.*	Coal	A train of eight loaded tubs was being drawn round a curve underground, when the two front tubs derailed. Whilst deceased and four other hookmen were re-railing the tubs the engineman again started hauling. Deceased was severely crushed between the tubs and the side of the road and died twelve hours later. Inspection and inquiry made.
121	15th March, 2 P.M.	Choitodih mine, Katrasgarh P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Maula Bux, (*m.*), 51, *Trollyman.*	Coal	Deceased was presumably riding on a train of loaded tubs which was being hauled up a slope. In jumping off at the top of the slope his foot was caught by one of the wheels, and was severely crushed and lacerated. He died from tetanus eight days later. Inspection and inquiry made.
122	15th March, 4-30 P.M.	South Kustore mine, Kusunda P. O., Bihar and Orissa.	Raniganj Coal Association, Ld.	Surai Manjhi, (*m.*), 14, *Door-attendant.*	Coal	Deceased was assisting a trammer to push a loaded tub along a tramming level on a grade varying from 1 in 40 to 1 in 60. They were overtaken by three other loaded tubs, which ran wild from the loading station. They were crushed between the tubs. Deceased sustained injuries to which he succumbed on the following day. The trammer was injured. Inspection and inquiry made.
123	19th May, 3-30 P.M.	Baraboni mine, Asansol P. O., Bengal.	New Beerbhum Coal Co., Ld.	Burja Hazra, (*m.*), 40, *Proping coolie.*	Coal	Deceased, with another coolie, was pushing a tub on top of which there were twelve long props. The tub overturned, and deceased fell and was struck on the head by one of the props. He received injuries from which he died seven hours later. Inspection and inquiry made.
124	16th June, 3-45 P.M.	Ledo Valley West mine, Margherita P. O., Assam.	Assam Railways & Trading Co., Ld.	Judhaybir Sannasi, (*m.*), 26, *Tub-pusher.*	Coal	Deceased worked at the foot of a self-acting incline. Owing to the breakage of the chain attached to the capping of the rope the tubs ran wild. Deceased was run over and sustained injuries to the head which caused death shortly after. Inspection and inquiry made.
125	20th August, 2 P.M.	Napur mine, Raniganj P. O., Bengal.	Napur Coal Co., Ld.	Bioram Manjhi, (*m.*), 48, *Coal-cutter.*	Coal	Two loaded tubs ran away from the top of a haulage slope, the banksman having left open the stop block. In error, the banksman then closed the safety points, so that the tubs continued to run down the incline, 200 feet in length, dipping at the rate of 1 in 4, and crashed through the wooden buffer at the bottom. The deceased miner was pinned against the side of the road by the leading tub at a point 20 feet below the buffer. He sustained injuries from which he died four hours later. Inspection and inquiry made.
126	28th August. 4-30 P.M.	Kujama mine, Jharia P. O., Bihar and Orissa.	Kanji and Shamji Nanji	Mukhia Rajwarin, (*f.*), 16, *Coal-carrier.*	Coal	The haulage rope broke near the top of an incline, allowing a train of ten full tubs to run backwards down the incline. The 'drag' operated, throwing the train off the road, where they were piled up one upon another. One tub was forced into a manhole occupied by deceased. She was killed instantly. Inspection and inquiry made.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			HAULAGE—*contd.*			
127	3rd September, 5-30 A.M.	Bulliari mine, Kusunda P. O., Bihar and Orissa.	Chuni Lal Coal Co.	Johuri Miah, (*m.*), 35, *Mining Sirdar.*	Coal	A train of empty tubs was being lowered down an incline, when the front tub became detached from the rest of the train, ran wild and was derailed at a curve where deceased was sitting. The tub pinned him against the side causing injuries from which he died three hours later. Inspection and inquiry made.
128	12th November, 9 P.M.	Khost mine, Khost P. O., Baluchistan.	North Western Railway	Ali Shafa, (*m.*), 25, *Miners' coolie.*	Coal	Deceased and another miner were being raised in a tram up a steeply inclined shaft. The tram derailed, and deceased, in attempting to get out of it, fell to the bottom of the shaft, 400 feet below, and was killed.
129	23rd December, 3 A.M.	Kustore North mine, Kusunda P. O., Bihar and Orissa.	Raniganj Coal Association, Ld.	Sumi Mejhian, (*f.*), 17, *Coal-carrier.*	Coal	Whilst lowering tubs from an underground landing on to a stop-block, the hookman missed a sprag with the result that two loaded tubs collided with two other tubs standing against the stop-block. The stop-block was broken by the impact, and the four loaded tubs ran wild for a distance of 100 feet and collided with two empty tubs which were standing at the entrance to a loading station. The empty tubs were overturned and fell on deceased, who was lying asleep at the time. She was killed instantly. Inspection and inquiry made.
130	25th December, 9 A.M.	Banksimulla mine, Charanpur P. O., Bengal.	Bengal Coal Co., Ld.	Dukhni Kole, (*f.*), 50, *Dust-carrier.*	Coal	Deceased was walking along a landing in the middle of the track for the loaded tubs. She was run over and killed by a tub. Inspection and inquiry made.
131	26th December, 8 A.M.	Barkui mine, Pench P. O., Central Provinces.	The Pench Valley Coal Co., Ld.	Mulchand Kotwar, (*m.*), 35, *Coal-cutter.*	Coal	A train of empty tubs was being lowered down an incline when the leading tub became uncoupled and ran wild. Deceased, who was walking up the incline, was struck by the run-away tub and fatally injured. Inspection and inquiry made.
132	27th December, 9-30 A.M.	Ghugus mine, Ballarpur P. O., Central Provinces.	Sir Kasturchand Daga and Mr. M. B. Dadabhoy.	Ramdoo, (*m.*), 14, *Trammer.*	Coal	Deceased was crushed between two tubs on a haulage road and sustained injuries which resulted fatally on the following day.
133	28th December, 1 P.M.	Patmohna mine, Sitarampur P. O., Bengal.	Patmohna Collieries, Ld.	Jugal Bauri, (*m.*), 32, *Trolleyman.*	Coal	Deceased was guiding a train of five full tubs round a curve, when his foot slipped under the rear wheel of the leading tub, and two of his toes were severed. Tetanus supervened and he died fourteen days later. Inspection and inquiry made.

SUNDRIES UNDERGROUND—*(11 deaths)*.

134	16th January, 3-30 P.M.	Dishergarh mine, Dishergarh P. O., Bengal.	Equitable Coal Co., Ld.	Rupa Sing, (*m.*), 40, *Tindal Sirdar.*	Coal	An electrically driven pump was being lowered down a dip gallery. Deceased, in spite of being warned not to do so, caught hold of the cables before the current was cut off. He was electrocuted. Inspection and inquiry made.
135	24th January, 4-30 A.M.	Sijua mine, Sijua P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Bigan Napit, (*m.*), 36, *Coal-cutter.*	Coal	This accident took place in a coal seam, 19 feet thick, which is worked in two sections. An intermediate band of shale, 2 feet thick, forms the floor of the top section and the roof of the lower section. A fall of roof in the lower section had reduced the thickness of the band. Whilst deceased was carrying a basket in the upper section the floor broke away leaving a hole, 2′ 6″ in diameter, through which he fell to the floor of the bottom section, a distance of 12 feet. His skull was fractured and he died within two days. Inspection and inquiry made.
136	2nd February, 3 P.M.	Jatachappa mine, Pench P. O., Central Provinces.	The Upper Pench Coal Co., Ld.	Manti Chamarin, (*f.*), 18, *Tub-filler.*	Coal	Deceased was carrying a piece of coal on her head and lost her footing. The coal fell on her leg and cut it. She died in hospital a week afterwards from tetanus.
137	20th February, 10 A.M.	Benahir mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Pustab Mura, (*m.*), 35, *Coal-cutter.*	Coal	A gang of seven coolies was carrying a prop through a gallery, in which props had been set. The prop they were carrying bumped against a standing prop, 24′ 6″ long, and knocked it out. Deceased was *sitting* down resting at a distance of about 20 feet. The falling prop struck him on the head and killed him instantly. Inspection and inquiry made.
138	17th May, 4 P.M.	Tikak Lower mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Shatey Mongar, (*m.*), 20, *Tub-filler.*	Coal	Deceased was shovelling coal down a narrow and steeply inclined road from an 'opening' or chamber above, when he slipped and fell upon his shovel. He sustained injuries to the abdomen and died on the following day. Inspection and inquiry made.
139	10th June, 5 A.M.	Mohpani mine, Mohpani P. O., Central Provinces.	Great Indian Peninsula Railway.	Sukhia Kotwarin, (*f.*), 22, *Coal-carrier.*	Coal	Deceased, whilst carrying a basket of earth on her head up a gradient of 1 in 6, slipped and fell down. The loaded basket fell upon her back. She sustained spinal injuries which resulted fatally within 24 hours.
140	19th June, 6-15 A.M.	Bhalgora mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., Ld.	Sokhi Korah, (*m.*), 45, *Coal-cutter.*	Coal	Deceased was sitting at a distance of about 22 feet from a point where the cutting of top coal in a pillar, 24 feet high, was in progress. A large piece of coal, which was thrown down by the miner who had cut it, struck the foot of a long prop supporting the roof, and this prop fell out and struck deceased on the head killing him instantly. Inspection and inquiry made.
141	22nd June, 12 NOON.	Taungpila mine, Tavoy P. O., Burma.	Quah Cheng Guan	Bhima Behara, (*m.*), 30, *Tributor.*	Wolfram	Whilst deceased was prospecting on the surface, the ground subsided over an old adit, and he was engulfed. His body was recovered by excavating to a depth of 20 feet. Death was due to suffocation.
142	23rd August, 4 P.M.	Khost mine, Khost P. O., Baluchistan.	North Western Railway	Ganesh Dass, (*m.*), 25, *Mine maistry.*	Coal	Deceased was engaged in releasing the stone in a blocked shute. He was caught in the sliding *debris* and fatally crushed.
143	1st November, 2 P.M.	Banksimula mine, Charanpur P. O., Bengal.	Bengal Coal Co., Ld.	Khedan Koiri, (*m.*), 16, *Coal-cutter.*	Coal	Deceased was carrying a lump of coal, weighing about 40 lbs., to a tub on an underground tramway when he fell down and sustained injuries to the head from which he died an hour later. Inspection and inquiry made.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			SUNDRIES UNDERGROUND—*contd.*			
144	9th December, 12 NOON.	Bhelatand mine, Sijua P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Rajani Meah, (*m.*), 22, *Coal-cutter.*	Coal	Deceased was cutting coal on the last portion of a pillar under extraction when a fall of about 3 cwts. of roof stone occurred. In avoiding it he tripped and fell on his back across the rail of a tramway. His spine was partially fractured and he died twelve days later. Inspection and inquiry made.
			SURFACE MACHINERY—(*1 death*).			
145	18th March, 8-30 P.M.	Ekhlehra mine, Pench P. O., Central Provinces.	Pench River Coal Co., Ld.	Krishna Gond, (*m.*), 18, *Banksman.*	Coal	Deceased was pushing a loaded tub into a tippler when the keps were accidentally withdrawn too soon. He overbalanced and fell forward into the shute. The tub fell upon him and killed him. Inspection and inquiry made.
			SURFACE BOILERS OR PIPE BURSTING—(*1 death*).			
146	13th September, 6 P.M.	Kendra mine, Pandaveswar P. O., Bengal.	Samla Kendra Collieries, Ld.	Surja Kumar, (*m.*), 24, *Blacksmith.*	Coal	A fitter was trying to caulk a joint where a 6″ bend pipe, off a main steam range, was screwed on to a flange bolted to the closed stop valve of an empty Lancashire boiler. He omitted to shut down the stop valve of another connected boiler which was working at a pressure of 100 lbs. per square inch. The bend was blown out of the flange, the connected portion of the main steam range became unscrewed, and the whole was flung to earth 7 feet below, taking with it the deceased blacksmith who was assisting. He died from his injuries within an hour. Inspection and inquiry made. (*See Report, page 15.*)
			ON SURFACE RAILWAYS AND TRAMWAYS BELONGING TO THE MINES—(*10 deaths*).			
147	23rd January, 3-30 P.M.	Bokaro mine, Bokaro P. O., Bihar and Orissa.	East Indian and Bengal Nagpur Railways.	Gangia Mallahin, (*f.*), 14, *Coal-carrier.*	Coal	Deceased attempted to uncouple one of a train of 25 empty tubs which was being pushed by hand on a siding in a quarry. She fell between the tubs and was dragged for some distance, sustaining a lacerated wound on the leg. She died of pneumonia in hospital about six weeks later. Inspection and inquiry made.
148	26th January, 3 P.M.	Shivrajpur mine, Shivrajpur P. O., Bombay.	Shivrajpur Syndicate, Ld.	Darga Lalla, (*m.*), 64, *Coolie.*	Manganese.	Deceased was crushed between a tub and the side of an open cutting on a surface tram line. Several of his ribs were fractured and, pneumonia supervening, he died five days later.
149	6th March, 5 P.M.	Bokaro mine, Bokaro P. O., Bihar and Orissa.	East Indian and Bengal Nagpur Railways.	Moira Lohar, (*m.*), 13, *Sprag-carrier.*	Coal	Deceased, whilst attempting to push a loaded tub through a tippler, fell on the line and was run over by a tub which was following. He was injured internally and died about two hours later. Inspection and inquiry made.

150	29th March, 8 A.M.	Kongon mine, Kongon P. O., Assam.	Nazira Coal Co., Ld.	Putma, (*f.*), 30. *Trammer.*	Coal	Deceased, while at work at the foot of a self-acting incline, was run over and killed by a train of tubs which broke away after a collision caused by the loaded train being sent down the wrong line. Inspection and inquiry made.
151	2nd June, 1-30 P.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Sandoo, (*m.*), age unknown, *Trackman.*	Lead-Silver	Deceased, whilst sleeping on the line in a tunnel was run over and killed by an electric motor trolley.
152	5th June, 8-35 P.M.	Kuardih mine, Kalipahari P. O., Bengal.	Kuardih Coal Co., Ld.	Bhusan Bhumji, (*m.*), 18, *Coal-cutter.*	Coal	Deceased, whilst under the influence of liquor, attempted to step on to a moving locomotive. He slipped and fell with his leg across the rail, and one of the wheels passed over his foot. He died from tetanus four days later. Inspection and inquiry made.
153	21st June, 9 P.M.	Chatrisgonda mine, Pandaveswar P. O., Bengal.	Samla-Kendra Collieries, Ld.	Nanu Bauri, (*m.*), 19, *Boiler fireman.*	Coal	Deceased was sleeping close to or between the rails on a surface railway siding. A train of empty tubs was backed into the siding and two tubs which were standing on the line were pushed forward a short distance. Deceased was dragged along by the front tub and fatally injured. Inspection and inquiry made.
154	6th July, 8 A.M.	Khewra mine, Khewra P. O., Punjab.	Government of India	Ali Mohomed, (*m.*), 20, *Coolie.*	Salt	Whilst tipping a wagon loaded with salt, deceased slipped and fell under the wagon. The body of the wagon and its load of salt fell upon him causing injuries which resulted in death shortly after.
155	12th October, 7-30 P.M.	Bulliari mine, Kusunda P. O., Bihar and Orissa.	Bulliari Coal Co.	Narbada Shanker, (*m.*), 16, *Tub-checker.*	Coal	Deceased attempted to 'tip' a loaded coal tub from an overbridge on to a loading depot, 12 feet below. Both the body and the frame of the tub overturned carrying deceased with them. He was crushed beneath the frame and received injuries to the head from which he died immediately after. Inspection and inquiry made.
156	16th November, 9-30 P.M.	Ena mine, Jharia P. O., Bihar and Orissa.	North-West Coal Co., Ld.	Mahudi Meah, (*m.*), 24, *Trolly coolie.*	Coal	Deceased, whilst walking along a surface tram-line, was overtaken by a train of ten loaded tubs. He was run over and killed instantly. He was somewhat deaf and hence failed to hear the train coming behind him. Inspection and inquiry made.
			MISCELLANEOUS ON SURFACE.—(*21 deaths.*)			
157	4th January, 11 A.M.	Parascole mine, Ondal P. O., Bengal.	Bengal Coal Co., Ld.	Trilochon De, (*m.*), 28, *Carpenter.*	Coal	Deceased was helping to remove a beam supporting the roof of a boiler house. The beam was safely lowered to the ground and deceased subsequently fell from a height of 12 feet on to the ground, from the top of a brick pillar on which he was sitting. He died of heart failure 18 hours later. Inspection and inquiry made.
158	17th February, 12-15 P.M.	Kargali mine, Bokaro P. O., Bihar and Orissa.	Great Indian Peninsular Railway.	Thukal Tanti, (*m.*), 40, *Coal-cutter.*	Coal	Deceased was getting coal with a hammer and wedge in a quarry. A small piece of the top of the wedge flew off and struck him on the leg, severing the femoral artery. He died from loss of blood within half an hour. Inspection and inquiry made. (*See Report, page 15.*)
159	23rd February, 4-30 P.M.	Ballarpur mine, Ballarpur P. O., Central Provinces.	Sir K. C. Daga and Mr. M. B. Dadabhoy,	Motya, (*m.*), 12, *Oil boy.*	Coal	Deceased entered a sand-bin used for supplying sand for mine packing. The sand fell upon him and he was suffocated.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			MISCELLANEOUS ON SURFACE—*contd.*			
160	3rd March, 4-30 P.M.	Amlabad mine, Jharia P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Bhim Doba, (*m.*), 22, *Earth-cutter.*	Coal	Whilst cutting earth for a railway embankment, deceased under-mined a bank, 8 feet high. A mass of congealed sand and gravel, weighing about a ton, fell upon him from a height of 4'-6". He died shortly after. Inspection and inquiry made.
161	17th March, 9-30 A.M.	Muslia mine, Kalipahari P. O., Bengal.	Ghusick and Muslia Collieries, Ld.	Nidhi Baurin, (*f.*), 25, *Loading coolie.*	Coal	Deceased and another woman were loading a wagon at a depot. They were filling baskets of coal within a passage through an embankment. The passage was flanked by vertical masonry walls. One of the walls collapsed suddenly and completely buried deceased. Her companion, who was only partially buried, was rescued. Inspection and inquiry made.
162	2nd April, 9-25 A.M.	Lodna mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co., Ld.	Thakur Singh, (*m.*), 19, *Labourer.*	Coal	Deceased, presumably out of curiosity, climbed up a steel tower carrying wires transmitting electricity at a pressure of 500 volts. He was found hanging on the wires, and when the current was switched off, he fell to the ground. Artificial respiration was applied, but failed to restore animation. Inspection and inquiry made.
163	20th April, 2 P.M.	Hermyingyi mine, Tavoy P. O., Burma.	The Burma Finance and Mining Co., Ld.	Ramsawmy, (*m.*), 15, *Wood cutter.*	Wolfram	Whilst deceased was cutting a log it slipped and rolled on him, inflicting injuries which caused his death on the following day.
164	2nd May, 8 A.M.	Kajora Khas mine, Ondal P. O., Bengal.	Kajora Khas Collieries, Ld.	Bhiri Baurin, (*f.*), 45, *Rope coolie.*	Coal	Two leather buckets containing water were being raised by separate ropes from the bottom of a sinking shaft, 80 feet in depth. One of the buckets reached the surface and the banksman shouted for the rope to be slackened. The women, who were pulling the rope of the second bucket, which was five feet from the top of the shaft, thinking that the signal to slacken the rope was meant for them, let go of the rope and allowed the bucket to run back. Deceased became entangled in the rope and was dragged a distance of 30 feet along the ground. She sustained concussion of the brain and died half an hour later. Inspection and inquiry made.
165	13th May, 0-30 P.M.	Hetkantra mine, Bhujudih P. O., Bihar and Orissa.	Krishna Coal Co., Ld.	Tusi Baurin, (*f.*), 15, *Earth carrier.*	Coal	Deceased went through a fence to get drinking water from a disused and water logged quarry. She fell into the water and sank immediately. Her body was recovered four days later. Inspection and inquiry made.
166	7th June, 8-30 A.M.	Patmohna mine, Sitarampur P. O., Bengal.	Patmohna Collieries, Ld.	Ram Lal Pun, (*m.*), 20, *Gurkha guard.*	Coal	Deceased was found in the bottom of a disused incline cutting containing water. It was presumed that he went out of his depth whilst bathing, and fell into the mud on the bottom which prevented him from saving himself. Inspection and inquiry made.

167	21st June, 8 A.M.	Taungpila No. 2 mine, Tavoy P. O., Burma.	Tavoy Wolfarm Co.	Lg. Shaw, (*m.*), 34, *Miner.*	Wolfram	Deceased was engaged in ground sluicing at the foot of a dump. The flow of water undermined the dump, and a portion of it fell upon deceased and buried him.
168	21st July, 2 P.M.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Khow Wong, (*m.*), 35, *Dump picker.*	Wolfram	Deceased was engaged in picking out ore from a waste dump. A slide of loose rock took place. He was buried by the sliding rock, and sustained injuries to which he succumbed on the same day.
169	11th August, 1-30 A.M.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Loo See, (*m.*), 24, *Tributor.*	Wolfram	Deceased was employed in sluicing operations. A stone fell upon him from the sluicing face at a height of 10 feet. He died on the following day.
170	20th August, 7-15 A.M.	Bhuggutdih mine, Jharia P. O., Bihar and Orissa.	Bengal-Nagpur Coal Co., Ld.	Bulka Meah, (*m.*), 14, *Punkha coolie.*	Coal	Deceased went to bathe in a tank. He got out of his depth, and was drowned before assistance could reach him. Inspection and inquiry made.
171	3rd September, 2 P.M.	Mundulpore mine, Nandi P. O., Bengal.	Mundulpore Coal Co., Ld.	Nitu Baurin, (*f.*), 55, *Sinking rope coolie.*	Coal	Water was being drawn out of a sinking pit, 30 feet deep, in a buffalo skin holding 10 gallons. Six women were on the leading draw pole and four on the second. Thinking the skin had been drawn over the landing plate the women turned round and slackened their hold on the rope. The weight overcame them and the rope went down the pit. Deceased was struck on the head by the rear pole and was killed instantly. Inspection and inquiry made.
172	22nd September, 2-35 P.M.	Lodna mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co., Ld.	Prayag Dosad, (*m.*), 34, *Tindal-coolie.*	Coal	A Lancashire boiler was being raised on its seating on screw jacks, and was steadied by means of wooden packing and wedges. One of the wedges became displaced and the boiler rolled over. Some of the packing struck deceased on the side of the head, killing him instantly. Inspection and inquiry made.
173	6th October, 10 A.M	Burdwan mine, Toposi P. O., Bengal.	Burdwan Coal Co., Ld.	Khudi Mejhian, (*f.*), 17, *Earth-cutter.*	Coal	Deceased was cutting clay in the bottom of an excavation, measuring 10′ × 14′ × 9′, when one side of the excavation caved in. She was buried under a mass of clay, weighing two tons, and was suffocated. Inspection and inquiry made.
174	10th October, 10 A.M.	Kanbauk mine, Tavoy P. O., Burma.	Kanbauk (Burma) Wolfram Mines, Ld.	Ah Sung, (*m.*), 30, *Tributor's coolie.*	Woolfram	Whilst engaged in washing for wolfram in the bed of a stream, deceased undermined the bank and was buried by the fall of some 12 tons of earth. He was killed instantly.
175	30th October, 5 A.M.	Bhulanbarari mine, Jharia P. O., Bihar and Orissa.	Bhulanbarari Coal Co., Ld.	Khago Bhuia, (*m.*), 25, *Trollyman.*	Coal	Deceased was raking out the coal from a coal tub which had been turned on end for the purpose on the stock heap. The tub tilted over sideways and rolled down the heap, carrying him with it and injuring him so seriously that he died five hours later. Inspection and inquiry made.
176	20th December, Early morning.	Bhulanbararee mine, Jharia P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ld.	Kamalananda Chatterjee, (*m.*), 26, *Clerk.*	Coal	Deceased, while under the influence of liquor, climbed the wall surrounding an inclined cutting and fell to the bottom, 35 feet below. He received injuries from which he died four days later. Inspection and inquiry made.
177	23rd December, 4 P.M.	Bokaro mine, Bokaro P. O., Bihar and Orissa.	East Indian and Bengal Nagpur Railways.	Chami Gowalin, (*f.*), 15, *Coal-carrier.*	Coal	Deceased and her sister were swinging on a wire fence on the edge of a quarry. The fence broke and they fell a distance of 10 feet. Deceased received injuries from which she died eight hours later. Inspection and inquiry made.

Fatal Accidents, 1920—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Reason for exclusion.	Cause of accident and remarks.
		DEATHS NOT INCLUDED IN THE STATISTICS—(*37 deaths*).					
1	Between the 3rd and 6th January.	Kuchidhana mine, Chhindwara P. O., Central Provinces.	The Indian Manganese Co., Ltd.	Tukdia, (*m.*), 45.	Manganese	Not employed.	Deceased was found floating in the water in a trial trench, about 12 feet deep. The cause of the accident was unknown. Inspection and inquiry made.
2	27th January, 12-15 P.M.	Nursumuda mine, Asansol P. O., Bengal.	Seetarampur Coal Co., Ltd.	Chatovah Bhuiya, (*m.*), 4.	Coal	Not employed.	Deceased was playing behind an empty tub, which was standing on a surface tramline. He stepped out in front of a full tub which was passing on the adjacent line and was knocked down, being killed instantly. Inspection and inquiry made.
3	4th February, 3 P.M.	Dharmaband mine, Katrasgarh P. O., Bihar and Orissa.	D. N. Ghosh & Bros.	Mukteswar Kora, (*m.*), 4.	Coal	Not employed	Deceased, whilst at play, fell into an unfenced boiler feed tank, 4' 6" deep, and, in the absence of assistance, was drowned. Inspection and inquiry made. (*See Report, page 15.*)
4	19th February, 9-30 A.M.	Jatachappa mine, Pench P. O., Central Provinces.	The Upper Pench Coal Co., Ltd.	Gonesh Chamar, (*m.*), 12, *Tub greaser.*	Coal	Not a mining accident.	Deceased and several other men were pushing an empty railway wagon. He was pushing from the side. In order to avoid some pools of water he attempted to get under the wagon, but slipped and fell, the rear wheel passing over him. He died on the following day as a result of his injuries.
5	25th March, 4 A.M.	Sijua mine. Sijua P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ltd.	Somri, (*f.*), 10, One child, name unknown, (*m.*) 6 months.	Coal	Not employed.	The deceased were burnt to death in a straw shelter which was set on fire by a spark from a fire which was burning close by.
6	7th April, 9-30 A.M.	Ballarpur mine, Ballarpur P. O., Centrl Provinces.	Sir Kasturchand Daga and Mr. M. B. Dadabhoy.	Jiggaroo Sumaloo, (*m*), 30, *Coolie.*	Coal	Not a mining accident.	Whilst deceased was trimming a coal wagon another wagon bumped into the wagon on which he was standing. He fell from the wagon and was run over and killed instantly.
7	14th April, During night actual time not known.	Bhutdoba mine, Kalipahari P. O., Bengal.	Bhagirathi Coal Co.	Gopal Manjhi, (*m.*), 50.	Coal	Not employed	Deceased was found lying dead at the bottom of a shaft, 115 feet in depth. The top of the shaft was securely fenced. Deceased apparently suffered from paralysis and was of unsound mind, and it was presumed that he threw himself into the shaft. Inspection and inquiry made.
8	15th April, Time not known.	Dhemo Main, mine, Sitarampur P. O., Bengal.	Dhemo Main Collieries Ltd.	Sahidon Muselmani, (*f.*), 45, *Raj Mistry's carrier.*	Coal	Not a mining accident.	The body of deceased was found in a well. She had been unwell for some time and it was presumed that she committed suicide. The top of the well was protected by an iron grating in which there was an opening only fifteen inches square. Inspection and inquiry made.

9	28th May, 9-30 A.M.	Bhowra mine, Jamadobi P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Chatia Hari, (*f.*), 6.	Coal	Not employed	Deceased was playing on the steps of a bathing tank, 3 feet deep. She overbalanced, fell into the water and was drowned. Inspection and inquiry made.
10	1st June, 8 A.M.	Sijua mine, Sijua P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Beharia Singh, (*m.*), 5.	Coal	Not employed	Deceased was drowned in a masonry boiler tank, 4 feet deep, used for bathing purposes. The walls of the tank were 4'-6" above ground level, but there were sloping buttresses giving access to the top of the wall. Inspection and inquiry made.
11	9th June, 8 A.M.	Sahana mine, Chora P. O., Bengal.	Sahana Coal Co., Ld.	Dassi Singh, (*f.*), 3.	Coal	Not employed	Deceased fell into a boiler tank containing 5 feet of water and was drowned. Inspection and inquiry made.
12	13th June, 10 A.M.	Central Kujama mine, Jharia P. O., Bihar and Orissa.	Central Kujama Coal concern.	Sahadwan, (*f.*), 30; Khadim, (*m.*), 6.	Coal	Not employed	The two deceased went into an abandoned part of a quarry where there was water 8 feet deep. The child probably fell into the water first and the mother went to the rescue. Search was made and both bodies were recovered within an hour. Death was due to drowning. Inspection and inquiry made.
13	14th June, 3 P.M.	Sowardih mine, Pathardih P. O., Bihar and Orissa.	Sowardih Coal Co., Ld.	Baru Bauri, (*m.*), 2½.	Coal	Not employed	The deceased infant had been left unattended. During a storm he was blown over. He was found face downwards in a pool of water about 10 inches deep. Death was due to suffocation. Inspection and inquiry made.
14	16th June, 9-30 A.M.	North Ghusick mine, Kalipahari P. O., Bengal.	Niga Valley Collieries, Ld.	Name not known, (*f.*), 30.	Coal	Not employed	The body of deceased, a person of unsound mind, was found lying at the bottom of a shaft, 73 feet in depth. The top of the shaft was securely fenced. Inspection and inquiry made.
15	22nd June, 1 P.M.	Kohinoor mine, Bhojudih P. O., Bihar and Orissa.	Pilcher & Co., Ld.	Sundri Dosad, (*f.*), 2½.	Coal	Not employed	Deceased crawled under the fencing of a boiler feed tank containing 6 feet of waetr. She fell into the water and was drowned. Inspection and inquiry made.
16	28th June, 5-30 A.M.	Faridpur mine, Charanpur P. O., Bengal.	Poniati Coal Co.	Sohagi Mejhain, (*f.*), 25, *Coal-carrier.*	Coal	Not a mining accident.	Deceased threw herself down a shaft, 134 feet in depth, and received injuries from which she died shortly after. The shaft was adequately fenced. Inspection and inquiry made.
17	7th July, 10 P.M.	Khas Jharia mine, Jharia P. O., Bihar and Orissa.	Khas Jharia Colliery Co., Ltd.	Tilak Teli, (*m.*), 6.	Coal	Not employed	The deceased child was asleep in a gallery in which his mother was working, when a mass of coal, about 25' × 10' × 5' thick, slipped from the side of the pillar, and a small portion fell upon him injuring him so severely that he died soon after. Inspection and inquiry made.
18	15th July, 4-30 P.M.	New Kessurgarh mine, Nowngarh P. O., Bihar and Orissa.	New Kessurgarh Coal Co., Ltd.	Monmotia Beldarin, (*f.*), 10.	Coal	Not employed	Deceased went to a well to draw water, overbalanced and fell in. Inspection and inquiry made. (*See Report, page 16.*)
19	5th August, 9 A.M.	Lakurka mine, Katrasgarh P. O., Bihar and Orissa.	Lakurka Coal Co., Ltd.	Gangia Bhuiani, (*f.*), 38, *Shale picker.*	Coal	Not a mining accident.	Deceased was sitting under a railway wagon sheltering from the rain, when the train was put in motion by a shunting engine. The wheels of one of the wagons passed over her body, killing her instantly. Inspection and inquiry made.
20	1st September, 5 P.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ltd.	Fulbassia, (*f.*), 4.	Coal	Not employed	Deceased was sitting on a charpoy upon which some 2 lbs. of gunpowder was drying in the sun. The gunpowder was ignited by some means unknown, burning the child so severely that she died three days later. Inspection and inquiry made. (*See Report, page 13.*)

Fatal Accidents, 1920—*concld.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Reason for exclusion.	Cause of accident and remarks.
		DEATHS NOT INCLUDED IN THE STATISTICS—*concld.*					
21	3rd September, time not known.	Shampur mine, Nirsachatti P. O., Bihar and Orissa.	Shampur Coal Co., Ltd.	Nepal Mahata, (*m.*), 9.	Coal	Not employed	The deceased child fell off the walling into an abandoned shaft partly full of water and was found drowned some days later. Inspection and inquiry made.
22	8th September, 11-30 A.M.	Kendwadih mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ltd.	Pairee Barhin, (*f.*), 8.	Coal	Not employed	Deceased, who was subject to fits, went to a cooling tank to get warm water for washing. She was found drowned in the tank. Inspection and inquiry made.
23	17th September, 3-30 P.M.	Kendwadih mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ltd.	Jamuna Noonia, (*m.*), 30, *Loading coolie.*	Coal	Not a mining accident.	Deceased was walking along the main line of a railway siding when a locomotive, pushing a train of empty wagons, came up behind him. The leading wagon struck him on the right shoulder and knocked him down under the wheels. He died two days later. Inspection and inquiry made.
24	23rd Sepember, 7-30 A.M.	Nandi mine, Nandi P. O., Bengal.	Adjai Coal Co., Ltd.	Sindhu Bala Baurin, (*f.*), 10.	Coal	Not employed	The deceased child was sitting under a wagon which was being loaded on a siding. The wagon was moved by impact from other wagons so that a wheel passed over the child. She died from her injuries within twenty minutes. Inspection and inquiry made.
25	1st October, 12-Noon.	Sonardih mine, Katrasgarh P. O., Bihar and Orissa.	Guru Das Bhattacharjee	Monger Kahar, (*m.*), 12.	Coal	Not employed	Deceased, who could not swim, was bathing in a colliery bathing tank, 10 feet deep. He got out of his depth and was drowned. Inspection and inquriy made.
26	6th October, 11-30 A.M	Miragpur mine, Tirodi P. O., Central Provinces.	Central India Mining Co., Ld.	Bowra, (*m.*), 6.	Manganese	Not employed	Deceased, who was stated to have been dumb and demented, was drowned whilst bathing in a waterlogged quarry.
27	25th October, 8 P.M.	Nundi mine, Nundi P. O., Bengal.	Adjai Coal Co., Ld.	Kusum Bowrin, (*f.*), 20, *Loading coolie.*	Coal	Not a mining accident.	Deceased, who was suffering from an incurable disease, was missed from her home. She was found shortly afterwards lying at the bottom of a shaft, 103 feet in depth. The shaft was securely fenced. Inspection and inquiry made.
28	4th November, 6 A.M.	Katras mine, Katrasgarh P. O., Bihar and Orissa.	Nowagarh Coal Co., Ld.	Khatun (*f.*), 5 to 8.	Coal	Not employed	Deceased was presumably drinking at a boiler tank when she fell in and was drowned. Inspection and inquiry made.
29	10th November, 11 A.M.	Lodna mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co., Ld.	Sidoo Hazam, (*m.*), 6.	Coal	Not employed	Deceased was found drowned in a boiler feed tank which was walled on all sides. Inspection and inquiry made.

30	11th November, 4 P.M.	Jamuria mine, Nandi P. O., Bengal.	Equitable Coal Co., Ld.	Dulia Goala, (*m.*), 36, *Tub repairer.*	Coal	Not a mining accident.	Deceased threw himself into a boiler feed tank, containing water 7 feet deep. He was drowned. The tank was securely fenced. Inspection and inquiry made.
31	21-22nd November, Night.	Sendra mine, Bansjora P. O., Bihar and Orissa.	Sendra Coal Co., Ld.	Tulshi Dosad, (*m.*), 40, *Coal-cutter*; Munia Dosad, (*f.*), 9, *Not employed*; Parni Dosad, (*f.*), 28, *Coal-carrier.*	Coal	Not a mining accident.	The deceased went to sleep in a room with a coal fire burning in a stove. They had blocked up all holes for the sake of warmth. They were asphyxiated. Inspection and inquiry made.
32	9th December, 11 A.M.	South Kustore mine, Kusunda P. O., Bihar and Orissa.	Raneegunge Coal Association, Ld.	Bhagaban Singh, (*m.*), 35, *Depot chaprassie.*	Coal	Not a mining accident.	Deceased, whilst labelling wagons, was passing between two loaded wagons which were about three feet apart, when another loaded wagon, which had just been lowered from under the screens, bumped the rear wagon and caused it to close on to the one in front. Deceased was crushed between the buffers, and sustained injuries to the chest from which he died a few hours later. Inspection and inquiry made.
33	23rd December, 3 A.M.	Sodepur (No. 11) mine, Dishergarh P. O., Bengal.	Bengal Coal Co., Ld.	Dukhi Telli, (*m.*), 38, *Stone-cutter.*	Coal	Not a mining accident.	Deceased went to sleep in a room in which a fire was burning, and was asphyxiated. Inspection and inquiry made.

APPENDIX II.

Table No. 2.

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1920.

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				Death-rate per 1,000 persons employed.		
			Number of separate fatal accidents.	Number of deaths.			Number of serious non-fatal accidents.	Number of persons seriously injured.					
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
						A.—COAL.							
Assam	Lakhimpur	2,725	11	11	...	11	103	95	8	103	6·08	...	4·04
	Naga Hills	419	2	1	1	2	1	1	...	1	4·81	4·74	4·77
	TOTAL	3,144	13	12	1	13	104	96	8	104	5·95	0·89	4·13
Baluchistan	Loralai	...	...	...	...	...	...	...	...	...	...	...	...
	Quetta-Pishin	86	...	...	...	...	1	1	...	1	...	...	...
	Sibi-Khost	779	3	3	...	3	...	...		...	7·14	...	3·85
	TOTAL	865	3	3	...	3	1	1	...	1	6·38	...	3·47
Bengal	Bankura, Raniganj	93	...	...	...	...	...	...	...	...	...	...	...
	Birbhum ,,	360	...	...	...	...	...	...	...	...	...	...	...
	Burdwan ,,	43,329	33	26	9	35	41	25	16	41	1·05	0·49	0·81
	TOTAL	43,782	33	26	9	35	41	25	16	41	1·04	0·48	0·80
Bihar and Orissa	Hazaribagh: Bokaro-Ramgarh	10,575	4	...	4	4	10	2	8	10	...	1·08	0·38
	Hazaribagh: Giridih	9,430	3	3	...	3	12	10	2	12	0·46	...	0·32
	Hazaribagh: Jharia	1,622	..	..	..	..	...	...	..	...	...	...	...
	Manbhum: Jharia	83,519	65	64	12	76	51	35	17	52	1·32	0·34	0·91
	Manbhum: Raniganj	10,196	7	11	1	12	2	2	1	3	2·07	0·21	1·18
	Palamau, Daltonganj	436	1	1	...	1	1	1	...	1	3·65	...	2·29
	Sambalpur, Hingir-Rampur	540	...	...	...	...	2	2	...	2	...	...	...
	Santhal Parganas: Jainty	1,494	2	2	...	2	...	...	...	...	2·60	...	1·34
	Santhal Parganas: Raniganj	375	...	...	...	...	...	...		...	...	...	...
	TOTAL	118,187	82	81	17	98	78	52	28	80	1·16	0··5	0·83
Central Provinces	Betul	21	...	...	...	...	...	...	...	...	...	...	...
	Chanda, Ballarpur	1,752	2	1	1	2	3	2	1	3	1·01	1·31	1·14
	Chhindwara, Pench Valley	4,900	7	6	1	7	4	3	1	4	2·11	0·49	1·43
	Narsinghpur, Mohpani	1,697	2	2	...	2	6	6	...	6	1·88	...	1·18
	Yeotmal	33	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	8,403	11	9	2	11	13	11	2	13	1·83	0·57	1·31
Burma	Northern Shan States	242	1	8	...	8	1	1	...	1	148·15	...	33·06
Panjab	Jhelum	1,113	4	4	...	4	...	...	...	...	5·79	...	3·59
	Mianwali	111	...	...	...	...	...	...	...	...	...	...	...
	Shahpur	96	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	1,320	4	4	...	4	...	...	...	...	5·22	...	3·03
	GRAND TOTAL (COAL)	175,943	147	143	29	172	238	186	54	240	1·39	0·40	0·93

APPENDIX II—*contd.*

Table No. 2—*contd.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1920—*contd.*

Provinces.	District and mineral field.	Total average number of persons employed daily.	Fatal accidents.				Serious accidents.				Death-rate per 1,000 persons employed.		
			Number of separate fatal accidents.	Number of deaths.			Number of serious non-fatal accidents.	Number of persons seriously injured.					
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
						B.—MICA.							
Bihar and Orissa	Manbhum	11	...	...	...	...	...	...	...	...	...	...	...
	Gaya	1,582	1	1	...	1	1	1	...	1	1·05	...	0·63
	Hazaribagh	13,688	6	13	...	13	5	7	...	7	1·58	...	0·95
	Monghyr	980	...	...	...	...	...	...	...	...	...	...	...
	Sambalpur	90	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	16,351	7	14	...	14	6	8	...	8	1·89	...	0·86
Madras	Kistna	36	...	...	...	...	...	...	...	...	...	...	...
	Nellore	4,153	2	2	...	2	4	9	...	9	0·66	...	0·48
	Salem	290	...	...	...	...	...	...	...	...	...	...	...
	Trichinopoly	20	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	4,499	2	2	...	2	4	9	...	9	0·64	...	0·44
Central Provinces	Balaghat	5	...	...	...	...	...	...	...	...	...	...	...
Rajputana	Ajmer-Merwara	1,106	1	1	...	1	...	...	...	...	1·48	...	0·90
	GRAND TOTAL (MICA)	21,961	10	17	...	17	10	17	...	17	1·23	...	0·77
						C.—MANGANESE ORE.							
Bombay	Panch Mahals	1,286	1	...	1	1	2	...	2	2	...	3·58	0·78
Central Provinces	Balaghat	5,294	...	...	...	...	4	3	2	5	...	...	...
	Bhandara	1,361	...	...	...	...	...	...	...	...	...	...	...
	Chhindwara	627	...	...	...	...	...	...	...	...	...	...	...
	Nagpur	4,208	2	2	...	2	4	...	4	4	0·69	...	0·48
	TOTAL	11,390	2	2	...	2	8	3	6	9	0·23	...	0·18
Madras	Vizagapatam	588	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (MANGANESE ORE).	13,264	3	2	1	3	10	3	8	11	0·19	0·33	0·23
						D.—LIMESTONE.							
Burma	Northern Shan States	152	1	5	...	5	...	...	...	...	32·89	...	32·89
Central Provinces	Bilaspur	433	...	...	...	...	...	...	...	...	...	...	...
	Jabalpur	3,701	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	4,133	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (LIMESTONE)	4,285	1	5	...	5	...	...	...	...	1·62	...	1·17

APPENDIX II—*contd.*

Table No. 2—*contd.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1920—*contd.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				DEATH-RATE PER 1,000 PERSONS EMPLOYED.		
			Number of separate fatal accidents.	Number of deaths. Below ground.	Above ground.	Total deaths.	Number of serious non-fatal accidents.	Number of persons seriously injured. Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
		E.—SALT.											
Panjab	Jhelum	856	1	...	1	1	4	1	3	4	...	14·71	1·17
	Mianwali	51	...	...	...	...	...	...	...	...	...	...	...
	Shahpur	62	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (SALT)	969	1	...	1	1	4	1	3	4	...	14·70	1·03
		POTASH. **Labour figures included with those for salt.*											
Punjab	Jhelum	...*	...	...	...	...	...	...	...	...	...	...	...
		F.—GEMS.											
Burma	Mogok (Rubies, etc.)	1,207	...	...	...	...	...	...	...	...	...	...	...
Rajputana	Ajmer-Merwara	12	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (GEMS)	1,219	...	...	...	...	...	...	...	...	..	...	...
		G.—SLATE.											
Bihar and Orissa	Monghyr	444	...	...	....	...	...	...	...	...	...	...	...
Panjab	Gurdaspur	...	...	...	...	...	...	...	...	...	...	...	...
	Gurgaon	225	...	...	...	...	...	...	...	...	...	...	...
	Kangra	192	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	417	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (SLATE)	861	...	...	...	...	...	...	...	...	...	...	...
		H.—GOLD.											
Bihar and Orissa	Singhbhum	96	...	...	...	...	...	...	...	...	...	...	...
Madras	Anantapur	338	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (GOLD)	434	...	...	...	...	...	...	...	...	...	...	...
		I.—IRON ORE.											
Bihar and Orissa	Singhbhum	1,253	...	...	...	...	2	...	2	2	...	...	...
Burma	Mandalay	608	1	2	...	2	...	...	...	...	12·27	...	3·29
	Northern Shan States	520	...	...	...	...	2	1	1	2	...	...	...
	TOTAL	1,128	1	2	...	2	2	1	1	2	6·39	...	1·77
Central Provinces	Jabalpur	197	..	...	...	...	...	...	...	...	...	...	...
Rajputana	Ajmer-Merwara	12	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (IRON ORE)	2,590	1	2	...	2	4	1	3	4	1·85	...	0·77

APPENDIX II—*contd.*

Table No. 2—*contd.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1920—*contd.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				DEATH-RATE PER 1,000 PERSONS EMPLOYED.		
			Number of separate fatal accidents.	NUMBER OF DEATHS.			Number of serious non-fatal accidents.	NUMBER OF PERSONS SERIOUSLY INJURED.					
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of injured persons.	Below ground.	Above ground.	Below and above ground.
		FULLERS EARTH.											
Central Provinces	Jabalpur	...*	*Labour figures included with those for Limestone.*										
		SAMARSKITE.											
Madras	Nellore	...*	*Labour figures included with those for Mica.*										
		WOLFRAM.											
Burma	Mergui	336	...	...	...	...	...	...	...	...	...	...	...
	Tavoy	4,177	8	3	5	8	7	4	4	8	1·03	3·92	1·92
	Thaton	31	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (WOLFRAM).	4,544	8	3	5	8	7	4	4	8	0·99	3·29	1·76
		SILVER.											
Burma	Northern Shan States	...*	*Labour figures included with those for Lead ore.*										
Madras	Anantapur	...*	*Labour figures included with those for Gold.*										
		K.—MAGNESITE.											
Madras	Salem	732	...	...	...	...	...	...	...	...	...	...	...
		L.—CHROMITE.											
Baluchistan	Zhob	376	...	...	...	...	...	...	...	...	...	...	...
Bihar and Orissa	Singhbhum	829	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (CHROMITE)	1,205	...	...	...	...	...	...	...	...	...	...	...
		MOLYBDENITE.											
Burma	Tavoy	...*	*Labour figures included with those for Wolfram.*										
		BARYTES.											
Madras	Kurnool	25	...	...	...	...	...	...	...	...	...	...	...
		M.—COPPER ORE.											
Bihar and Orissa	Singhbhum	2,094	...	...	...	...	7	2	5	7	...	...	...
Central Provinces	Balaghat	62	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (COPPER ORE)	2,156	...	...	...	...	7	2	5	7	...	...	...
		N.—BAUXITE.											
Bombay	Kaira	97	...	...	...	...	...	...	...	...	...	...	...

APPENDIX II—*contd.*

Table No. 2—*concld.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1920—*concld.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				DEATH-RATE PER 1,000 PERSONS EMPLOYED.		
			Number of separate fatal accidents.	Number of deaths. Below ground.	Above ground.	Total death.	Number of serious non-fatal accidents.	Number of persons seriously injured. Below ground.	Above ground.	Total number of injured.	Below ground.	Above ground.	Below and above ground.
						O.—CLAY.							
Bihar and Orissa	Bhagalpur	255	...	...	...	...	...	...	...	...	...	...	...
	Manbhum	174	1	1	...	1	1	1	...	1	8·13	...	5·75
	Palamau	79	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	508	1	1	...	1	1	1	...	1	4·67	...	1·97
Central Provinces	Jabalpur	916	...	...	...	...	...	...	...	...	...	...	...
Delhi	Delhi	46	...	..	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (CLAY)	1,470	1	1	...	1	1	1	...	1	0·90	...	0·68
						P.—LEAD ORE.							
Burma	Northern Shan States	950	4	13	1	14	9	7	2	9	21·24	2·96	14·74
Central Provinces	Drug	34	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (LEAD ORE)	984	4	13	1	14	9	7	2	9	20·67	2·82	14·23
						Q.—TIN ORE.							
Bihar and Orissa	Hazaribagh	140	1	2	...	2	...	...	...	...	25·00	...	14·29
Burma	Mergui	445	...	...	...	...	...	...	...	...	...	...	...
	Tavoy	503	...	...	...	...	...	...	...	...	...	...	...
	Thaton	40	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	988	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (TIN ORE)	1,128	1	2	...	2	...	...	...	...	2·83	...	1·77
						R.—STEATITE.							
Central Provinces	Jabalpur	210	...	...	...	...	...	...	...	...	...	...	...
Madras	Kurnool	7	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (STEATITE)	217	...	...	...	...	...	...	...	...	...	...	...
						S.—OCHRE.							
Bihar and Orissa	Puri	37	...	...	...	...	...	...	...	...	...	...	...
						T.—GRAPHITE.							
Bihar and Orissa	Singhbhum	29	...	...	...	...	...	...	...	...	...	...	...
Central Provinces	Betul	10	...	...	...	...	...	...	...	...	...	...	...
Rajputana	Ajmer-Merwara	39	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (GRAPHITE)	78	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (ALL MINERALS)	234,199	177	188	37	225	290	222	79	301	1·33	0·40	0·96

APPENDIX II—*contd.*

Table No. 3.

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1920, classified according to the age and sex of the workers.

Mineral.	Province and mineral field.	Number of separate fatal accidents.	Number of deaths.								Total below and above ground.
			Below ground.				Above ground.				
			Adult males.	Adult females.	Children (under 13).	Total.	Adult males.	Adult females.	Children (under 13).	Total.	
Coal	Assam — Lakhimpur	11	11	...	...	11	...	...	...	...	11
	Assam — Naga Hills	2	1	...	...	1	...	1	...	1	2
	Total Assam	13	12	...	...	12	...	1	...	1	13
	Baluchistan, Sibi, Khost	3	3	...	...	3	...	...	...	...	3
	Bengal, Raniganj	33	21	5	...	26	5	4	...	9	35
	Bihar and Orissa — Bokaro, Ramgarh	4	...	...	...	...	2	2	...	4	4
	Bihar and Orissa — Giridih	3	2	1	...	3	...	...	...	...	3
	Bihar and Orissa — Jharia, Manbhum	65	54	9	1	64	10	1	1	12	76
	Bihar and Orissa — Manbhum, Raniganj	7	9	2	...	11	1	..	...	1	12
	Bihar and Orissa — Palamau, Daltonganj	1	1	...	...	1	...	...	...	...	1
	Bihar and Orissa — Sonthal Parganas, Jainty.	2	2	...	...	2	...	...	...	...	2
	Total Bihar and Orissa	82	68	12	1	81	13	3	1	17	98
	Burma, Northern Shan States	1	8	...	...	8	...	...	...	...	8
	Central Provinces — Chanda	2	1	...	...	1	1	...	...	1	2
	Central Provinces — Chhindwara	7	4	2	...	6	1	...	...	1	7
	Central Provinces — Narsinghpur	2	1	1	...	2	...	...	...	...	2
	Total Central Provinces	11	6	3	...	9	2	...	...	2	11
	Punjab, Jhelum	4	4	...	...	4	...	...	...	...	4
	Total Coal	147	122	20	1	143	20	8	1	29	172

APPENDIX II—*contd.*

Table No. 3—*concld.*

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1920, classified according to the age and sex of the workers—*concld.*

Mineral.	Province and mineral field.	Number of separate fatal accidents.	Number of deaths.								
			Below ground.				Above ground.				Total below and above ground.
			Adult males.	Adult females.	Children (under 19).	Total.	Adult males.	Adult females.	Children (under 19).	Total.	
Mica	Bihar and Orissa, Hazaribagh	6	13	...	...	13	...	...	...	...	13
	Bihar and Orissa, Gaya	1	1	..	...	1	...	...	...	...	1
	Total	7	14	...	...	14	...	...	...	...	14
	Madras, Nellore	2	1	1	...	2	...	...	...	...	2
	Rajputana, Ajmer	1	1	...	...	1	..	...	...	...	1
	Total Mica	10	16	1	...	17	...	...	...	..	17
Manganese	Bombay, Panch Mahals	1	...	...	...	...	1	...	...	1	1
	Central Provinces, Nagpur	2	2	...	...	2	...	...	...	...	2
	Total Manganese	3	2	...	...	2	1	...	...	1	3
Limestone	Burma, Northern Shan States	1	5	...	...	5	...	...	...	...	5
Lead Ore	Burma, Northern Shan States	4	13	...	...	13	1	...	...	1	14
Tin Ore	Bihar and Orissa, Hazaribagh	1	2	...	...	2	...	...	...	...	2
Iron Ore	Burma, Mandalay	1	2	...	...	2	...	...	...	...	2
Wolfram	Burma, Tavoy	8	3	...	...	3	5	...	...	5	8
Salt	Punjab, Jhelum	1	...	...	...	...	1	...	...	1	1
Clay	Bihar and Orissa, Manbhum Raniganj	1	...	1	...	1	...	...	...	...	1
Grand total (all minerals)		177	165	22	1	188	28	8	1	37	225

APPENDIX II—*concld.*

Table No. 4.

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1920, classified according to cause of accident.

Mineral worked.	Number of separate fatal accidents.	Number of persons killed.											Death-rate per 1,000 persons employed.		
		Explosions of fire-damp.	Falls of roof.	Falls of side.	In shafts.	Suffocation by gases.	By explosives.	Irruptions of water or falling into water.	Haulage.	Miscellaneous below ground.	Surface.	Total deaths.	Below ground.	Above ground.	Below and above ground.
Coal	147	5	45	26	28	1	8	8	16	10	25	172	1·39	0·40	0·98
Clay	1	...	...	1	...	...	...	...	...	...	...	1	0·90	...	0·68
Iron Ore	1	...	...	2	...	...	...	...	...	...	...	2	1·85	...	0·77
Lead Ore	4	...	1	...	12	...	...	...	...	...	1	14	20·67	2·82	14·23
Limestone	1	...	...	5	...	...	...	...	...	...	...	5	1·62	...	1·17
Manganese	3	...	...	...	1	...	1	...	...	...	1	3	0·19	0·33	0·23
Mica	10	...	2	5	3	...	...	...	...	...	...	17	1·23	...	0·77
Salt	1	...	...	...	...	...	...	...	...	...	1	1	...	14·70	1·03
Tin Ore	1	...	...	...	...	...	2	...	...	...	...	2	2·83	...	1·77
Wolfram	8	...	...	1	...	...	1	...	...	1	5	8	0·99	3·29	1·76
Total 1920	177	5	48	40	44	8	12	8	16	11	33	225	1·33	0·40	0·96
Total preceding year.	252	1	95	75	47	...	7	1	41	12	33	312	1·78	0·36	1·25
Difference	—75	+4	—47	—35	—3	+8	+5	+7	—25	—1	...	—87	—0·45	+0·04	—0·29

APPENDIX III.

PROSECUTIONS UNDER THE INDIAN MINES ACT, 1901.

Statement of prosecutions instituted under the Indian Mines Act, 1901, during the year 1920.

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number convicted.	Numbers of rules and sections of the Act contravened.	Remarks.
Bengal	Burdwan	1	1	1	Section 20, Rule 7 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	1	1	Section 20, Rules 3, 7, 19 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	1	...	Section 20, Rule 7 of Notification No. 864-68—20, dated 10th March 1904.	Acquitted.
	Do.	1	1	1	Section 20, Rule 1 of Notification No. 11793-103, dated 30th December 1908, as amended by Notification No. 5072-113, dated 1st July 1916.	
	Do.	1	1	1	Ditto ditto.	
	Do.	1	1	1	Ditto ditto.	
	Do.	1	1	1	Ditto ditto.	
	Manbhum	1	2	1	Section 20, Rule 3 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	3	3	Section 20, Rule 3 of Notification No. 864-68—20, dated 10th March 1904, and Section 21 Special Rules 27 and 31.	
	Do.	1	1	1	Section 20, Rule 19 of Notification No. 864-68—20, dated 10th March 1904, and Section 21 Special Rule 22.	
	Do.	1	3	2	Section 20, Rules 9 and 11 of Notification No. 864-68—20, dated 10th March 1904 and Section 21 Special Rules 34 and 35.	
	Do.	1	1	1	Section 20, Rule 12 of Notification No. 864-68-20, dated 10th March 1904.	
Bihar and Orissa	Do.	1	2	2	Section 13(1), Rule 47 of Notification No. 2968-82, dated 21st April 1906.	
	Do.	1	1	1	Section 20, Rules 1 and 3 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	1	1	Section 20, Rule 3 and 19 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	4	4	Section 20, Rule 19 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	2	2	Section 20, Rule 1 of Notification No. 11793-103, dated 30th December 1908 as amended by Notification No. 5072-113, dated 1st July 1916.	
	Do.	1	1	...	Ditto ditto.	Withdrawn.

APPENDIX III—*concld.*

PROSECUTIONS UNDER THE INDIAN MINES ACT, 1901—*concld.*

Statement of prosecutions instituted under the Indian Mines Act, 1901, during the year 1920—*concld.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number convicted.	Numbers of rules and sections of the Act contravened.	Remarks.
Bihar and Orissa	Manbhum	1	4	4	Section 20, Rule 1 of Notification No. 11793-103, dated 30th December 1908, as amended by Notification No. 5072-113, dated 1st July 1916.	
	Do.	1	2	...	Ditto ditto	Acquitted.
	Bhagalpur	1	1	1	Ditto ditto.	
	Hazaribagh	1	2	2	Ditto ditto.	
	Do.	1	2	2	Ditto ditto.	
	Do.	1	2	2	Ditto ditto.	
	Do.	1	1	1	Ditto ditto.	
	Do.	1	1	1	Ditto ditto.	
	Do.	1	1	1	Ditto ditto.	
	Do.	1	1	1	Ditto ditto.	
	Do.	1	1	1	Ditto ditto.	
	Do.	1	1	...	Ditto ditto	Withdrawn.
	Do.	1	1	...	Ditto ditto	Do.
	Do.	6	1	...	Ditto ditto	Do.
	Do.	3	1	...	Ditto ditto	Do.
	Do.	7	1	...	Ditto ditto	Do.
	Do.	1	1	1	Ditto ditto.	
	Do.	1	2	2	Section 20, Rule 2 of Notification No. 11793-103, dated 30th December 1908, as amended by Notification No. 5072-113, dated 1st July 1916.	
	Do.	1	2	2	Section 20, Rule 4 of Notification No. 11793-103, dated 30th December 1908, as amended by Notification No. 5072-113, dated 1st July 1916, and Rules 3 and 19 of Notification No. 6436-152, dated 2nd September 1911.	
Rajputana	Ajmer	1	2	2	Section 20, Rule 1 of Notification No. 11793-103, dated 30th December 1908, as amended by Notification No. 5072-113, dated 1st July 1916.	
	Do.	1	2	...	Ditto ditto	Acquitted.
	Do.	1	2	...	Ditto ditto	Do.

APPENDIX IV.

MISCELLANEOUS.

Statement No. 1.

List of Inspection Circles.

No. 1 Circle.	No. 2 Circle.
1. All mines in Bihar and Orissa except mines in the district of the Santhal Parganas and such mines in the district of Manbhum as lie west of a line drawn from mile 175 on the Bengal Nagpur Railway to mile 169 on the Grand Trunk Road and continued in a straight line across the district.	1. All mines in Bengal.
2. All mines in Baluchistan.	2. Such mines in Bihar and Orissa as lie in the district of the Santhal Parganas and in the district of Manbhum east of a line drawn from mile 175 on the Bengal Nagpur Railway to mile 169 on the Grand Trunk Road and continued in a straight line across the district.
3. All mines in the North-West Frontier Province.	3. All mines in Bombay.
4. All mines in the Punjab.	4. All mines in the Central Provinces.
5. All mines in Rajputana.	5. All mines in Madras.
6. All mines in Assam.	6. All mines in Burma.

Statement No. 2.

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1920.

(a) Certificates granted to holders of English certificates of competency.

FIRST CLASS.

NAME.	No. of Indian certificate.	Date of Indian certificate.	No. of English certificate.	Date of English certificate.
Maden, Henry	229	19th January 1920	602	27th January 1919.
Jones, William James	230	Ditto	4,146	28th January 1912.
Allen, Harry Sargent	231	Ditto	1	30th January 1913.
Jones, David	232	Ditto	534	26th July 1918.
Stanton, William Thomas	233	Ditto	181	26th January 1915.
Woodhead, Frank Neave	234	Ditto	499	23rd January 1918.
Sheppard, George Clement	235	Ditto	617	27th January 1919.
Jones, David John	236	Ditto	465	24th January 1918.
McArthur, James	237	Ditto	471	24th January 1918.
Jones, Griffith	238	Ditto	352	24th January 1917.
Glover, Mathew	239	Ditto	2,334	13th January 1904.
Wightman, James Hyslop	240	Ditto	392	27th July 1917.
Alexander, Arthur Cecil	241	Ditto	3,713	23rd August 1910.
Wightman, William	242	Ditto	233	22nd July 1915.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 2—*contd.*

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1920—*contd.*

(*a*) Certificates granted to holders of English certificates of competency—*contd.*

FIRST CLASS—*contd.*

NAME.	No. of Indian certificate.	Date of Indian certificate.	No. of English certificate.	Date of English certificate.
Robinson, Ted	243	6th February 1920	4,000	13th March 1912.
Winfield, Cland William	244	Ditto	436	27th July 1917.
Dufton, Valentine Sydney	245	Ditto	345	24th January 1917.
Smithurst, Leonard	246	10th May 1920	618	27th January 1919.
Marr, James Heppel	247	Ditto	874	15th March 1895.
McCormick, Michael	248	Ditto	3,004	14th June 1907.
Black, David	249	Ditto	3,256	15th June 1909.
Seaman, Tom	250	Ditto	428	27th July 1917.
Reid, Alexander	251	Ditto	3,625	9th June 1910.
Haden, Henry Frank	252	Ditto	2,952	11th June 1907.
Morgan, William	253	Ditto	4,160	28th June 1912.
Wallace, William	254	Ditto	700	30th July 1919.
Jones, William Emlyn	255	Ditto	3,893	3rd July 1911.
Foster, John	256	Ditto	3,265	25th September 1908.
Penmar, William Brown	257	Ditto	685	30th July 1919.
Howl, Thomas Ernest	258	Ditto	82	2nd February 1914.
Archibald, David	259	Ditto	627	30th July 1919.

(*b*) Certificates granted to holders of English certificates of competency.

SECOND CLASS.

Black, Henry	24	29th June 1920	72	30th July 1913.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 2—*contd.*

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1920—*contd.*

(*b*) certificates of competency.

FIRST CLASS.

NAME.	No. of certificate.	Date of certificate.	REMARKS.
Bose, Bhupendra Kumar	114	10th May 1920.	
Grieveson, Thomas John	115	Ditto.	
Das, Dhirendra Nath	116	Ditto.	
Fitzgerald, James	117	Ditto.	
Baksi, Kali Krishna	118	Ditto.	
Walker, Terence George	119	Ditto.	
Mahata, Jyotish Chandra	120	Ditto.	

SECOND CLASS.

Banerji, Ram Dass	191	10th May 1920.	
Ghosh, Debendra Nath	192	Ditto.	
Kitchen, Philip H.	193	Ditto.	
Wilson, Thomas	194	Ditto.	
Roy, Jogesh Chandra	195	Ditto.	
Chattoraj, Jitendra Mohan	196	Ditto.	
Brownlow, Eric Hugh	197	Ditto.	
Linton, Eric Alwynne	198	Ditto.	
Laik, Surendra Nath	199	Ditto.	
Banerji, Bijoy Bhusan	200	Ditto.	
Mitra, Surendra Nath	201	Ditto.	
Karmakar, Kali Pada	202	Ditto.	
Starling, Robert Edwin McNiven	203	Ditto.	
Franz, Donald Joseph	204	Ditto.	
Mitra, Nalinranjan	205	Ditto.	
Lahiri, Ambika Charan	206	Ditto.	
Mazumdar, Jitendra Nath	207	Ditto.	
Mukherji, Bholanath	208	Ditto.	
Mukherji, Dwijendu Bhusan	209	Ditto.	
Banerji, Purna Kam	210	Ditto.	
Bhattacharji, Jagat Bandhu	211	Ditto.	
Panday, Kali Pada	212	Ditto.	
Mukherji, Ram Krishna	213	Ditto.	

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 2—*concld.*

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1920—*concld.*

(*a*) Certificates of service.

FIRST CLASS.

NAME.	No. of certificate.	Date of certificate.	REMARKS.
Lethorn, Frederick Edward	156	11th May 1920.	
Whiffen, Cecil Herbert	157	29th June 1920.	
Bagchi, Purna Chandra	158	Ditto.	

SECOND CLASS.

NAME.	No. of certificate.	Date of certificate.	REMARKS.
Cotterill, William	203	11th May 1920.	
Danson, John Henry	204	Ditto.	
Khan, Shahadat	205	29th June 1920.	

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 3.

List of Universities and Colleges approved by the Governor-General in Council for the purposes of Rules 32 and 33 under the Indian Mines Act, 1901.

Name of Institution and Degree or Diploma.	Date.
University of Birmingham in respect of its Degree of B.Sc. in Mining and Diploma in Mining.	11th June 1904.
University College of Bristol in respect of its Senior Diploma in Mining.	16th September 1904.
University of Cambridge in respect of its Diploma in Mining Engineering.	6th June 1905.
University of Durham in respect of its Degree of B.Sc. in Mining.	21st December 1903.
Durham College of Science in respect of its Diploma in Mining.	29th June 1904.
University of Glasgow in respect of its Degree and Diploma in Mining.	28th September 1904.
Glasgow and West of Scotland Technical College in respect of its Diploma in Mining.	28th June 1904.
University of Leeds in respect of its Degree of B.Sc. in Mining and Diploma in Mining.	21st November 1904.
University of London in respect of its B.Sc. Degree in Mining for Internal Students, subject to the Degree being endorsed by the University with a certificate of four months' practical experience in a mine.	9th June 1905.
University of London in respect of its B.Sc. Degree in Mining for External Students, subject to the Degree being endorsed by the University with a certificate of four months' practical experience in a mine.	7th August 1906.
Royal School of Mines in respect of its Associateship in Mining.	24th March 1904.
University of Oxford in respect of its Diploma B. for Colliery Engineers (in Scientific Engineering and Mining subjects).	11th February 1905.
University College of Sheffield in respect of its Diploma in Mining.	15th July 1904.
University College of South Wales and Monmouthshire in respect of its Diploma in Mining.	19th April 1904.
Wigan Mining and Technical College in respect of its Diploma in Mining.	26th August 1904.
Bengal Engineering College, Sibpur, in respect of its Diploma in Mining.	22nd February 1907.
Merchant Venturers' Technical College, Bristol, in respect of its Diploma in Mining Engineering.	5th October 1905.
Victoria University of Manchester in respect of its Degree and Certificate of Mining.	14th February 1906.
University College of Nottingham in respect of its Diploma in Mining Engineering.	28th March 1906.
University of Sheffield in respect of its Degree of Bachelor of Engineering (Mining).	30th June 1906.
Heriot-Watt College in respect of its Certificate in Mining Engineering.	16th January 1908.
Calcutta University in respect of its Degree of Bachelor of Engineering in the Branch of Mining Engineering.	24th September 1910.
Harvard University, Cambridge, Massachusetts, in respect of its Diploma in Mining Engineering.	22nd February 1913.
Columbia University, New York, in respect of its Degree of Engineer of Mines.	13th March 1915.
California University, United States of America, in respect of its Degree of Mining Engineer.	19th February 1916.
Pittsburg University, United States of America, in respect of its Degree of Engineer of Mines.	19th February 1916.
Leland Stanford Junior University, California, in respect of its Degree of Bachelor of Arts in Geology and Mining.	10th August 1918.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 4.

BENGAL ENGINEERING COLLEGE.

THE MINING CLASSES.

Admissions to the Diploma Course in Mining at the Civil Engineering College, Sibpur.

The Diploma Course covers two sessions, commencing yearly in April, and lasting till the examinations in the following March. (There is a vacation of about three months in August, September and October.) Six weeks of each session is spent at a camp of mine surveying in the colliery districts.

Three classes of students are admitted—

Occasional—who are admitted to receive training in connection with private business.

Regular—who need have no experience of Mining.

Special—who have had about two years' previous experience of coal-mining (underground).

Admissions are made as follows :—

Regular and occasional students.—Age may not exceed 20 on January 1st of the year of admission—

A.—Through a special preparatory course of one year's duration at the Civil Engineering College. Admissions in the middle of February.

B.—Through the Sub-Overseer classes (a two years' course) at Dacca, Burdwan, Rajshahi and Pabna in Bengal; Bankipore in Bihar and Orissa.

Special students—

C.—Direct from the mines to the Mining classes without passing through either A or B. Admissions at the beginning of April. Applications must be made by 1st March accompanied by certificates from the colliery managers under whom candidates have served, showing the period and nature of employment underground.

Admission qualifications to A, B and C—

The passing of the Matriculation Examination, the Junior Cambridge Examination, the Examination held at the end of the supplementary course for elementary European schools, or equivalent.

The number that can be admitted is limited. The selection of candidates rests with the Principal who, all other things being equal, will prefer the younger of two candidates.

Scholarships awarded by the Bengal Government—

For Regular students—

Scholarships of the following number and value are available for Regular students admitted under A; these are awarded on the result of the examination held at the end of the preparatory course A :—

Two of Rs. 12 monthly.

Three „ 6 „

Stipends awarded by the Bihar and Orissa Government—

Two Boarding stipends of Rs. 15 monthly tenable for three years by poor and capable students of that Province. These are available in either the Mining or Mechanical and Electrical Engineering classes.

For special students.—Awarded by the Bengal Government—

Awarded on the result of the examination held at the end of the lectures given in the colliery districts by the Instructor in Mining—

One of Rs. 50 for Europeans.

One or two of Rs. 25 for Indians.

These amounts should be sufficient to maintain a special student resident at the college.

For further particulars apply for the Apprentice Department Circular.

B. HEATON,

Principal, Bengal Engineering College, Sibpur,
Botanic Garden P. O.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 5.

MINING INSTRUCTION IN BENGAL AND BIHAR AND ORISSA.

[*The Mining Education Advisory Board desire that Colliery Managers will kindly publish this information in their collieries. An appeal is also made to them to support the lectures by seeing that members of their colliery staff, who are suitable, take advantage of the lectures and attend them regularly.*]

The full course comprises two parts, the lectures in which are delivered in alternate years as follows :—

The principles of Coal Mining 1920-21, 1922-23, etc.

The principles of Mechanical Engineering of Coal Mines 1921-22, 1923-24, etc.

A fee of Rs. 5 (five rupees) payable to the Mining Instructor on the first registration of his name is charged to each student for each year's series of lectures. This fee is non-returnable.

Programme for Session 1920-21.

LECTURES on the Principles of Mechanical Engineering of Coal Mines will be delivered in English as follows :—

JHARIA COAL-FIELD.—INSTRUCTOR MR. JAMES MCARTHUR.

Jharia	... Lecture-room near Club	... Mondays	... 5-30	P.M.
Sijua	... Lecture-room near Station	... Tuesdays	... 5-0	„

RANIGANJ COAL-FIELD.—INSTRUCTOR MR.

Deshergarh	... Lecture-room near Club	... Wednesdays	5-30	P.M.
Raniganj	... Bengal Coal Co., Ltd. Zamindari office ...	... Thursdays	... 5-0	„
Jamuria	... Chief Mining Engineer's Office, Sibpur Colliery	... Friday	... 5-30	„

The course of instruction, consisting of not less than 30 lectures, will commence the first week in September and end in the following April. The examination will be held early in May. Candidates who pass the examination will receive a certificate recording their success. No candidate will, however, be permitted to sit for the examination unless he has attended 50 per cent. of the lectures and received 40 per cent. of the marks allotted for home work.

Rupees 100 monthly is offered in scholarships awarded by the Mining Education Advisory Board on the results of the examination, these will be tenable for two years at the Sibpur College and are granted to enable the holders to attend the full course for the Diploma in the Principles of Mining. One scholarship of Rs. 50 is reserved for Europeans and two of Rs. 25 are awarded to Indians.

The following Local Committees have been appointed :—

RANIGANJ COAL-FIELD.

Deshergarh Centre.	*Jamuria Centre.*	*Raniganj Centre.*
Mr. H. Lancaster, *Chairman.*	Mr. H. Lancaster, *Chairman.*	Mr. H. Lancaster, *Chairman.*
„ J. B. Wardlaw (Deshergarh).	„ P. S. Keelan (Charanpur).	„ P. S. Keelan (Charanpur).
„ Geo. Miller (Sitarampur).	„ G. S. Castles (Charanpur).	„ A. T. Creet (Kalipahari).
„ F. Owen (Deshergarh).	„ D. N. Archibald (Sripur).	„ W. J. Rees (Raniganj).
Babu M. N. Roy (Begunia).	„ W. S. Elphinstone (Asansol).	Babu Promotho Nath Hazra (Toposi).
„ P. C. Tarafdar (Mugma).	Babu Atul Shashi Mitra (Asansol).	„ Purna Chandra Bagchi (Kalipahari).
„ S. N. Ghosh (Barakar).		„ S. Chaudhuri (Jamehari, Raniganj).

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 5—*contd.*

JHARIA COAL-FIELD.

Jharia Centre.

Mr. F. L. G. Simpson, *Chairman.*
„ R. G. M. Bathgate (Jamadoba).
„ J. Kirk (Jamadoba).
„ J. B. Argyle (Lodna).
„ R. Barrowman (Standard Coal Company, Jharia).
Babu Jhawari Lal Kalayan Rai Dholakia (Joyrampur Colliery, Kusunda P. O.)
„ Narendra Nath Sarkar (South Kujama, Jharia).

Sijua Centre.

Mr. F. L. G. Simpson, *Chairman.*
„ A. A. Agabeg (Sijua).
„ R. Heron (Bhalgora, Jharia) P. O.
„ H. M. Bull (Bansjora).
„ G. C. Leach (Sijua P. O.)
Babu Trikumdas Doyal (Bullihari Colliery, Kusunda P. O.).
„ Basanta Kumar Roy (Kirkend).

T. H. RICHARDSON,

Secretary, Mining Education Advisory Board,
B. E. College, Sibpur Botanic Garden, P. O. Howrah.

MINING INSTRUCTION IN THE COALFIELDS OF BENGAL AND BIHAR AND ORISSA.

SYLLABUS OF THE COURSE OF INSTRUCTION.

The lectures in the following courses are delivered in alternate years :—

THE PRINCIPLES OF COAL MINING.

1. *Geology.*—General structure of the earth's crust; igneous and aqueous rocks; definitions of outcrop, dip, strike, fault, roll, wash-out and dyke, etc.; recording geological observations, reading a geological map; description of the Indian coal bearing rocks; composition and properties of coal. Commercial values of coal.

2. *Exploration.*—Prospecting, trial shafts and trenching; advantages of boring; methods of boring; driving through faults, uses of boreholes in mines, etc.

3. *Breaking ground.*—Common tools; storage and use of explosives; electric fuses; machine drills; coal-cutting machines.

4. *Sinking.*—Site of colliery; position of inclines and shafts, their excavation and shape, apparatus used in sinking; lining shafts; arrangements at top of sinking shaft; brief mention of special methods of sinking.

5. *Methods of working.*—Quarrying, advantages of bench work, disposal of soil; shaft pillars; pillar and gallery method, working thick seams in stages, extraction of pillars, panels; brief description of longwall and chambering methods.

6. *Supporting.*—Props and lids, bars, chocks or cogs, square sets, special timbering of loose ground; arching; steel girders; packing; dry and hydraulic stowing.

7. *Mine gases.*—Their experimental preparation by chemicals, and illustration of their physical and physiological properties; their chemical composition; methods of detecting; explosions; spontaneous combustion of coal; dangers of coal dust.

8. *Ventilation.*—Ascensional currents, currents induced by the heat of steam or furnace; mine fans; friction of air in mines; theory of splitting the air; calculations of ventilating pressure, etc.; coursing the air; measurement of quantity of air; use of anemometer, watergauge, thermometer and barometer; reversing the air current.

9. *Safety lamps.*—Principle of the safety lamps; Sir Humphrey Davy's experiment types of safety lamps; firedamp detectors.

THE PRINCIPLES OF MECHANICAL ENGINEERING OF COAL MINES.

1. *Applied Mechanics.*—Mensuration; definitions of force, motion, friction, work and energy; the simple machines; mechanical and electrical units; hydrostatics; the siphon; pressure of gases; Boyles' law.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 5—*concld.*

2. *Steam, Electricity and Compressed air.*—Theory of steam boilers and their fittings the steam engine; the dynamo; the electric motor; the air compressor.

3. *Winding.*—Types of winding engines and description of parts; calculation of the dimensions of winding engines; strength of ropes and chains; detaching hooks; over winding prevention devices; rope cappings; care and examination of ropes, buckets, cages guide ropes.

4. *Pumping.*—The lift pump; the force pump; sinking pumps; pumps with positive valve motion; the pulsometer; turbine pumps; calculations of the dimensions of pumps; methods of supporting pumps and pipes; strength of pipes; pipe joints; dams to hold back water.

5. *Hauling.*—Tramways; tubs; hand tramming; horse haulage; self-acting inclines; locomotives; single rope haulage; main and tail rope haulage; endless rope or chain haulage; calculations of the dimensions of hauling engines, ropes, etc.; capping of haulage ropes; couplings; haulage clips, etc.; signalling.

6. *Surface arrangements.*—Headframes and pulleys; receiving frames; keps; arrangements of roads on pit bank; tipplers; simple screening and sizing; railway sidings; aerial ropeways.

7. Simple treatment of coking and bye-product ovens.

Adopted by the Mining Education Advisory Board at their meeting of 27th January 1917. Copies of this circular may be obtained from the Secretary or from the Instructor.

T. H. RICHARDSON,

Secretary.

BENGAL ENGINEERING COLLEGE, SIBPUR;

The 10th September 1920.

Statement No. 6.

No. 219-D.

GOVERNMENT OF INDIA.

DEPARTMENT OF COMMERCE AND INDUSTRY.

Delhi, the 17th January 1920.

NOTIFICATION.

(MINES REGULATIONS.)

In exercise of the power conferred by section 20 of the Indian Mines Act, 1901 (VIII of 1901), Governor-General in Council is pleased to direct that in the rules regarding Mine Managers and their certificates published with the notification of the Government of India in the Department of Commerce and Industry, No. 2968-82 (G. & M.), dated the 21st April 1906, as subsequently amended, the following amendments shall be made, namely :—

(1) For rule 29 of the said rules the following shall be substituted, namely :—

"29. Certificates of competency under these rules shall be granted by the Board of Examiners and their decision regarding the grant of such certificates shall be final. Certificates granted by the Board shall hold good throughout British India, and shall be of two classes, namely, first and second class."

(2) Rules 38, 39 and 40 of the said rules are hereby cancelled.

2. The amendments shall take effect from the 30th June 1920.

A. H. LEY,

Secretary to the Government of India.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 7.

No. M-205/7.

GOVERNMENT OF INDIA.

BOARD OF INDUSTRIES AND MUNITIONS.

Dated Simla, the 13th September 1920.

NOTIFICATION.

In exercise of the power conferred by section 20 of the Indian Mines Act, 1901 (VIII of 1901), the Governor-General in Council is pleased to direct that the following amendment shall be made in the rules published with the notification of the Government of India in the Department of Commerce and Industry, No. 11793-103, dated the 30th December 1908, as subsequently amended, namely :—

After rule 10 of the said rules, the following new rule shall be added, namely :—

"11. A copy of these rules shall be kept at every mine and shall be produced at any time on the request of an Inspector of Mines."

F. R. R. RUDMAN,

Secretary, Board of Industries and Munitions.

Statement No. 8.

No. M-1/11.

GOVERNMENT OF INDIA.

BOARD OF INDUSTRIES AND MUNITIONS.

Dated Simla, the 20th October 1920.

NOTIFICATION.

In exercise of the powers conferred by section 20 of the Indian Mines Act, 1901 (VIII of 1901), the Governor-General in Council is pleased to direct that in the rules regarding mine managers and their certificates published with the notification of the Government of India in the Department of Commerce and Industry No. 2968-82, dated the 21st April 1906, as subsequently amended, the following amendments shall be made, namely :—

(1) In rule 45 the words "in which more than 150 persons are on an average employed underground simultaneously, or" shall be omitted and for the figure 1,800, the figure 2,500 shall be substituted.

(2) In rule 46 the words "in which more than 50 or less than 150 persons are on an average employed underground simultaneously, or" shall be omitted, and for the figure 1,800, the figure 2,500 shall be substituted.

(3) In rule 47 the words "in which not more than 50 persons are on an average employed underground simultaneously, or" shall be omitted.

J. C. B. DRAKE,

Secretary, Board of Industries and Munitions.

APPENDIX IV—*concld.*

MISCELLANEOUS—*concld.*

Statement No. 9.

LAND ACQUISITION (MINES) ACT, 1885.

Particulars required to be furnished by colliery owners to Local Governments when giving notice under Section IV of the Land Acquisition (Mines) Act, 1885, of their intention to work coal under land acquired for a railway :—

(*a*) The name, residence and profession of the person giving the notice.

(*b*) The name of the mine, together with that of the village and district in which the mine is situate.

(*c*) The name of the railway line or of the siding and the main line to which the siding is attached, under which the mine is situate.

(*d*) The names of the railway stations and the mileage between which the said siding or the said portion of the railway land, under which the mine is situate, falls.

(*e*) The number and date of the declaration under which the land was acquired.

(*f*) A tracing showing the boundaries of, and the area over which, the acquired land extends.

SGPI-31-2CIM—4-10-31—1200.

Department of Mines, India

REPORT

OF THE

CHIEF INSPECTOR OF MINES IN INDIA

UNDER THE INDIAN MINES ACT (VIII OF 1901)

FOR THE YEAR ENDING

31st December 1921

BY

R. R. SIMPSON, M.Sc.

Chief Inspector of Mines in India

134447

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1922

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Lists of mines worked under the Indian Mines Act, 1901, in British India during the year ending the 31st December 1921 are stocked for sale to the public at the office of the Chief Inspector of Mines in India, Post Box No. 60, Dhanbad, East Indian Railway, Manbhum District.

FROM

R. R. SIMPSON, ESQ., M.Sc.,

Chief Inspector of Mines in India,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
DEPARTMENT OF INDUSTRIES, SIMLA.

Dated Dhanbad, the 23rd May 1922.

SIR,

I have the honour to submit the report upon the inspection of mines in British India for the year ending 31st December 1921.

INTRODUCTION.

It may be explained that this report relates entirely to the administration of the Indian Mines Act, 1901. The Act applies to British India only and not to the Indian States. Mines which are less than 20 feet deep are excluded from its scope. For the complete figures of production of all minerals raised from excavations of all depths in British India and the Indian States reference may be made to the statements of the "Mineral Production of India" published in the Records of the Geological Survey of India, and to the "Quinquennial Review of the Mineral Production of India" published every five years by the same Department. Mysore, where the Kolar goldfield is situated, and Hyderabad (Nizam's Dominions) have their own Departments of Mines. Detailed information of the mineral industries of those States is given in the annual reports of their respective Chief Inspectors of Mines.

During the year mines in the Southern Shan States of Burma were brought within the scope of the Act, mines in the Northern Shan States having similarly been brought under the Act in the previous year. The Government of Burma were pleased to exempt from the operation of the Act all stone quarries in Burma, steatite mines in the Minbu district and the ruby workings and Twinza oil wells worked by native methods in the Katha district and the Magwe division, respectively.

Section I.—Persons employed.

During the year 1921 the daily average number of persons working in and about the mines regulated by the Indian Mines Act was 249,663, as compared with 234,199 in the previous year. This is an increase of 15,464 persons or 6·60 per cent. Of these persons 149,299 worked underground and 100,364 on the surface.

One hundred and forty nine thousand one hundred and sixty six were adult males, 91,949 were adult females and 8,548 were children under 12 years of age.

Those employed in coal mines numbered 190,647 which is 14,704 more than those employed in 1920 and slightly greater than the number employed in 1919 for an output of coal some three and a half million tons greater.

There was again an acute scarcity of coal mining labour in the Bengal and Bihar and Orissa coalfields. The general discontent caused by the high cost of food and clothing was fanned by political agitators, with the result that there were sporadic strikes. The holding of the All India Trade Union Congress in the Jharia coalfield towards the end of the year had a disturbing influence, and work more or less ceased at the collieries for a week or longer. No solid benefit has resulted from the deliberations of the Congress, but the delegates

who attended had opportunities of learning how much has been done by the companies operating the larger mines to improve the lot of the mine workers. One point in the discussion obtained considerable notice, and this was the readiness of the mine owners to increase wages provided that the miners worked with greater regularity and produced more coal.

There was no general increase in the contract rate for coal getting, but the stress of competition for the limited supply of labour undoubtedly led to indirect payments equivalent to an increase of wages. There was no serious epidemic disease and the general health of the labour force was good.

At the Margherita collieries in Upper Assam employment could have been found for a larger number of workers. There were 1,641 recruitments and 432 repatriations. The total labour population was 7,586 persons, of whom 4,858 were adult workers. There were no epidemics or strikes during the year. The labour unrest on the tea gardens had not affected the mine workers. No further increase of wages was given.

In the Central Provinces imported labour was as usual used for mining purposes. For light work such as the removal of overburden in quarries local labourers are employed, and they were available in sufficient numbers. The general health of the mining camps was good.

At the Bawdwin lead-silver mine in the Northern Shan States, Upper Burma, there was again a shortage of labour. The force is cosmopolitan to a degree, but the majority of the miners are Chinese. They migrate annually from the province of Yunnan. Efforts are being made to settle these workers on the mines. There were no strikes during the year, and but little sickness. A new general hospital is under construction.

In the Hazaribagh mica field there was a certain amount of unrest due to outside agitators. There was a demand for higher wages and a distinct tendency to insubordination and contempt for orders. When it was found, however, that, owing to the depressed state of the mica market the working of the mines was being restricted as far as possible, agitation ceased and there was no more trouble.

At the copper mines in the Singhbhum district there were no organised strikes, but more or less successful attempts were made to prevent women from working at ore-sorting and similar work on the surface. The general health of the employees was fair, but there was a good deal of malaria.

At the Khewra salt mine in the Punjab there were serious labour difficulties. Influenced by outsiders the miners put forward certain unreasonable demands. They came out on strike at the beginning of February and remained on strike for nearly four months, when they returned to work on the old terms. Some few months later wages were increased by 12½ per cent.

Section II.—Output of Minerals.

COAL.

The statement given below shows the output of coal in the various provinces in British India during the years 1920 and 1921:—

Province.	*Output in tons.*	
	1921.	1920.
Assam	312,022	324,965
Baluchistan	42,155	27,672
Bengal	4,259,642	4,207,452
Bihar and Orissa	12,964,659	11,973,339
Burma	300	...
Central Provinces	712,914	491,205
Punjab	67,242	58,078
TOTAL	18,358,934	17,082,711

The total output in 1921 was 18,358,934 tons which is 1,276,223 tons or 7·47 per cent. more than in the previous year, when a decrease in the output of 21·49 per cent. was recorded.

The opening stocks in 1921 were 2,403,530 tons and the closing stocks 2,104,725 tons. The fact that the closing stocks were so considerable is evidence of the inadequacy of the supply of railway wagons. Matters would have been much worse in this respect if a better supply of labour had enabled the mines to be worked to their full capacity.

The despatches amounted to 15,780,799 tons, and 2,436,367 tons were consumed on the collieries. The quantity of coal used for coking was 440,573 tons, and 121,136 tons of hard coke and 151,417 tons of soft coke were made. The marked decreases in 1920 and 1921 in the figures for the production of coke are misleading. At a large number of collieries coal is now despatched from the collieries to coke plants elsewhere, and this coal is included under despatches. The figures for coke given in this report relate only to coke made on the collieries. In the revised form of Annual Returns mine owners will be required to state the amount of coal despatched to coke factories.

Analyses of the figures relating to the output of coal and the manufacture of coke will be found in Appendix I, Table II, on page 38.

The bulk of the increase was in Bihar and Orissa and Bengal. Figures of output for the two principal coalfields are as follows :—

——	*Output in tons.*		*Percentage of increase.*
	1921.	*1920.*	
Jharia Coalfield	10,059,649	9,294,040	8·24
Raniganj Coalfield	5,211,845	4,997,679	4·29

It should be remembered that although the Raniganj coalfield is chiefly in Bengal yet a considerable part of it is in the province of Bihar and Orissa.

Except for a slight decrease in Assam there were increases of output in all other provinces. Mines in the Central Provinces were exceptionally prosperous and increased their output by 45 per cent.

There was no improvement in the wagon supply, and the efforts of the Coal Transportation Committee to bring in a scheme for better allotment of wagons failed owing to the various interests clashing. Exports of coal were restricted for the whole year. Prices of coal remained high owing to the demand being far in excess of the supply. Very high prices were paid for odd wagons secured on public supply.

Although the increase in the total output was considerable (7·47 per cent.) yet there was probably an actual decrease in the output of first class coal. There was a great extension of quarrying operations owing to the greater ease with which labour for working open quarries can be obtained. Many of these quarries are connected to underground workings which will inevitably be flooded out during the rainy season. Another bad effect of the scarcity of labour has been the systematic reduction of the pillars of coal left to support the roofs of mines. A number of mines have been ruined by this process and large quantities of coal have been lost for ever.

The keen demand for Central Provinces coal which was apparent at the close of the year 1920 fell away early in the year owing to the increase in output coinciding with a short ginning season locally, consequent on poor cotton crops. It improved, however, when, owing to the coal strike in England, imports of coal ceased. Before the middle of the year these favourable factors combined with the scarcity of coal in Bengal created a flourishing trade for Central Provinces coal, which continued until November. A set back was experienced when foreign coal began to come into Bombay and improved supplies became available from Bengal.

Figures showing the output per person employed are given below : –

	Tons per person employed.			
	Below ground.		Above and below ground.	
	1921.	1916-20.	1921.	1916-20.
British India	168	179	96	110
Bengal and Bihar	178	183	100	113
Assam	145	153	93	99
Baluchistan	62	64	37	38
Central Provinces	89	117	59	74
Punjab	58	69	35	42

In the United Kingdom in 1919 the output of coal per person employed below ground was 242 tons, and per person employed above and below ground 193 tons.

MICA.

The output was 29,470 cwt., as compared with 44,667 cwt. in 1920. There was thus a decrease of 34·02 per cent.

Except for a few small orders from America for splittings there was no demand whatever for mica during the year. Many mines were closed. In those which remained at work operations were reduced to the smallest scale possible, and this only to prevent the labourers deserting the mines altogether. There were said to be large stocks of mica in London, and the year closed with no prospect of improvement in sight.

MANGANESE ORE.

There was a small decrease (8·22 per cent.) in the output of manganese, the figures being 534,757 tons, as compared with 582,636 tons in 1920. There was a good demand for ore during the early part of the year, but towards the middle, owing to the coal strike in the United Kingdom and the trade depression on the Continent, there was little or no demand. There was a slight improvement towards the end of the year, but generally speaking the year was a poor one for the manganese industry. There was a sharp fall in prices, the average rate being 8*d.* per unit f. o. b. Bombay or Calcutta. Ocean freights ruled at 20*s.* per ton.

ROCK SALT.

The output of rock salt was 123,084 tons, as compared with 181,092 tons in 1920. The large decrease was due to a prolonged strike at the Khewra mines. By far the largest output of rock salt is obtained from these mines. The total thickness of the salt beds at Khewra is about 475 feet. They are highly inclined. The mines have been worked for at least 300 years, and from the year 1849, when the British administration of the Punjab commenced, up to 1896 two million tons of salt had been mined. Since that date some two and

a half million tons more have been extracted from the mines. The present average output is about one hundred and thirty thousand tons per annum.

The method of working is a chamber system, the chambers being 40 feet wide and the pillars between the chambers 30 feet wide. They are set out with mathematical accuracy so that each pillar in a lower seam is vertically below the pillars in upper seams. Some of the chambers are as much as 700 feet in length and up to 200 feet in height. Their walls are vertical and dressed smooth by hand. The grandeur of these excavations, pure white in colour or delicately stained with red, must be seen to be appreciated.

LEAD-SILVER ORES.

The output of lead and silver ores from the Bawdwin mines in the Northern Shan States, Burma, was 144,089 tons in 1921. The output in 1920 was 128,908 tons. The increase was, therefore, 11·78 per cent. The production of refined lead was 33,717 tons, and of refined silver 3,555,021 ounces. A small quantity of silver (619 ounces) was produced as a bye-product of gold mining in Madras. The average prices obtained were Rs. 348-6-5 per ton of refined lead and Rs. 2-11-0 per standard ounce of refined silver.

WOLFRAM AND TIN ORES.

The output of wolfram continued to decline, the decrease for the year being 48·99 per cent. The figures were 884 tons, as compared with 1,733 tons in 1920. There was also a small decrease (2·2 per cent.) in the output of tin ore, the figures being 1,032 tons, as compared with 1,056 tons in 1920. Not a single mine was worked for wolfram alone during the year. In December 1921 twenty-six mixed ore (wolfram and tin) mines and twenty tin mines were at work. In January the price of wolfram was 27*s.* per unit and in December 11*s.* nominal. The price of tin which was £207 per ton early in the year steadily declined to £172 per ton at the end of the year.

At the beginning of the year the Government of Burma inaugurated a scheme for financing the mixed ore producers, and this has to a certain extent helped to keep the industry alive.

GEMS.

The output of gems increased by 28·25 per cent., the figures being 200,215 carats, as compared with 156,108 carats in 1920. The quantities of each gem mined were as follows:—

	Carats.
Rubies	... 112,197
Sapphires	... 48,916
Spinel	... 32,802
Beryl	... 6,300

The condition of the market for coloured stones was on the whole better than in the previous year. Sales were considerably larger, but there was practically no increase in price. There was a good demand in India for practically all qualities of rubies and sapphires. In London and Paris, however, sales were small owing to the general financial depression and heavy taxation, but as always in those markets really fine and valuable specimens were in demand. No large gems of fine quality were found at the Burma Ruby mines. In the same locality there was a still further falling off in the number of "native miners" who pay license fees. The number was 7,435, as compared with 12,559 and 29,843 in the two preceding years.

GOLD.

The output of gold decreased by 25·92 per cent. The quantity produced was 10,108 ounces, as compared with 13,645 ounces in 1920. At the single producing mine in the Anantapur gold field, Madras, the Company has given twelve months' notice of the relinquishment of their mining rights.

COPPER ORE.

The output of copper ore was 32,560 tons, as compared with 28,167 tons in 1920, the increase being 15·60 per cent. The whole of this came from a single mine in the Singhbhum District. A total of 833 tons of refined copper were produced, the production in 1920 having been 512 tons. The low production of copper was due partly to mechanical troubles and partly to shortage of coke consequent on labour troubles in the coalfields. In addition to the copper produced from the local ore 310 tons of copper were produced from matte shipped from South Africa. The high freight rates, however, made this business unprofitable. The average price obtained was about Rs. 1,150 per ton f. o. r., or rather less than in the previous year.

IRON ORE.

The production of iron ore increased from 148,472 tons to 286,190 tons, an increase of 92·76 per cent. The greater portion of the increase came from a new mine in the Singhbhum District which has not yet been provided with transport facilities. The whole of the ore mined there is lying stacked on the ground pending the completion of a railway to the mine.

The figures given above do not include the iron ore used at the Jamshedpur Steel Works, supplies for which are obtained from mines in an Indian State which does not come under the operation of the Indian Mines Act.

CHROMITE ORE.

The output of chromite was 27,727 tons, as compared with 23,123 tons in 1920. This is an increase of 19·91 per cent., and the output was a record. The chief producing mines are situated in Baluchistan within 50 miles of the Afghan frontier. The disturbed condition of the border has increased the difficulty of operating the mines.

OTHER MINERALS.

There were increases in limestone, slate, magnesite, bauxite, molybdenite, barytes and ochre, and decreases in steatite, graphite, clay and fuller's earth. A production of 347 tons of apatite was reported.

Section III.—Accidents.

During the year 1921, at mines regulated by the Indian Mines Act, 1901, there were 232 fatal accidents, being an increase of 55 on the number which occurred in 1920, and an increase of 41 on the average number in the preceding five years.

These accidents involved the loss of 293 lives, or 68 more than in 1920. Of these persons 236 were males and 57 females. In three separate accidents the number of lives lost was 11, 5 and 5, respectively. In two cases 4 lives, in ten cases 3 lives, and in seventeen cases 2 lives were lost.

The causes of these accidents have been classified as follows :—

Cause.	Number of accident.	Percentage of total number of accident.
Misadventure	124	53·5
Fault of deceased	65	28
Fault of fellow-workmen	14	6
Fault of subordinate officials	7	3
Fault of management	17	7·3
Faulty material	5	2·2
TOTAL .	232	100

The improvement in respect of accidents from falls of roof and sides was not maintained. There were 136 such accidents, as compared with 72 in 1920 and 128 in 1919. About one-third of them were due to persons working in prohibited places and as a rule the victims had deliberately broken down or passed through a fence. Many of these accidents would have been prevented by the exercise of more vigilance by the supervising staff. In some cases the supervising staff was insufficient in number. Five of the accidents, causing fourteen deaths, were the result of general collapses of underground workings. To some extent the increase in this class of accident was due to the great extension of quarrying operations in the coal fields. No less than twenty fatal accidents occurred in quarries.

There were fewer accidents in shafts. The number was 17, as compared with 29 in the previous year. Two of these accidents were due to the breaking of winding ropes. One was caused by the failure of a detaching hook, and another by the breaking of a link at the time of an overwind.

Accidents on haulage roads again increased. There were 30 such accidents, as compared with 16 in 1920.

There were four fatal explosions of firedamp causing fifteen deaths. One of these took place in a shaft and caused the death of eleven persons (see page 8). Two were due to the ignition of small accumulations of firedamp in unventilated galleries.

The number of accidents from explosives increased from 9 in the previous year to 14 in 1921. Twenty lives were lost. Most of these accidents were due to carelessness in the handling and use of gunpowder. In two cases deceased were drying gunpowder over an open fire.

There were three accidents caused by electricity. In one case two men operating an electric coal-cutter were electrocuted. The other two accidents were due to persons climbing up standards carrying electrical transmission wires.

The death rate per thousand persons employed was 1·17, while that of the preceding five years was 1·05. At coal mines only these figures were 1·35 and 1·14, and at mines other than coal 0·61 and 0·91. At coal mines in the United Kingdom during the ten years ending with and including 1919 the average death rate per thousand persons employed underground was 1·46, as compared with 1·74 for Indian coal mines.

The death rate per million tons raised at coal mines was 13·99, while that of the preceding five years was 10·40. At coal mines in the United Kingdom during the ten years ending with and including 1918 the death rate per million tons raised was 5·18.

Deaths occurring in each class of mines were as follows:—257 in coal mines, 7 in wolfram mines, 5 in mica mines, 4 in tin mines, 5 in silver-lead mines, 5 in copper mines, 4 in manganese mines, 2 in limestone mines, 2 in ruby mines, one in a gold mine and one in an iron mine.

Fifteen persons lost their lives by explosions of gas, 81 by falls of roof, 91 by falls of side, 22 in shafts, 20 by explosives, 32 by haulage, 12 by other accidents underground, and 20 on the surface.

A list of these accidents appears in Appendix II, Table I. In addition to these there were 37 other accidents causing the death of 37 persons. These also appear in Appendix II, Table I, but are listed separately, reasons being given in each case for their exclusion from the statistical table.

Each fatal accident is described briefly in Appendix II, Table I, but the following are reported at greater length. Details of certain non-fatal accidents are also given. The numbers refer to the numbers in the Appendix.

EXPLOSIONS OF FIREDAMP.

No. 2.—The Eastern Coal Company, Limited's Amlabad coal mine.

Ignitions of small quantities of firedamp in sinking shafts have occurred from time to time in the coalfields of India, but they have been harmless. In this case, however, an explosion of firedamp occurred in a sinking shaft, and eleven men who were at work at the bottom of the shaft were so severely burned that they all died within two days.

Explosive gas is of rare occurrence in the Barakar stage of the coal bearing rocks in the Jharia coalfield, but it was met with in No. 1 shaft Amlabad at a depth of 181 feet, and safety lamps were sent to the colliery. Subsequently there was an emission of gas in No. 2 shaft, 166 feet deep. A sample of this gas was collected and sent to Calcutta for analysis. The report of the analyst was that the gas was non-explosive, and that it differed from ordinary air only in respect of a higher percentage (1·4 per cent) of carbon dioxide.

Work in Nos. 1 and 2 pits was discontinued owing to water trouble, and the sinking of No. 3 pit continued. At a depth of 145 feet a coal seam, 3 feet in thickness, was passed through, and a small quantity of explosive gas was emitted. The gas bubbled through the water, and the bubbles could be ignited as they came to the surface. After two days the emission ceased, and the shaft was sunk through the seam to a depth of 152 feet. For a few days after the finding of the gas inspections with safety lamps were made, but the presence of explosive gas was not again detected.

On 28th February, *i.e.*, ten days after gas was first detected at No. 3 pit, the morning shift of sinkers descended No. 3 pit at 7-30 A.M. Several inspections were made during the shift by the head sinking-in-chargeman and by the shift chargeman who found everything as usual and in proper order. About 10-30 A.M. thirteen shots loaded with gelignite were fired. Afterwards the cock of the 3 inch air pipe was opened, and compressed air permitted to discharge into the bottom of the shaft so as to dissipate the fumes. Rather more than an hour later the chargeman and the blaster made an inspection, and, everything being found safe, the sinkers descended and resumed the work of loading the broken rock into the bucket. Work proceeded as usual, and seven buckets filled with stone were raised. The seventh bucket had been landed on the sinking trolly, and the trolly had been pushed over the shaft. Two men were standing on the trolly and unhooking the chains from the bucket when an explosion took place in the bottom of the shaft, and a rush of air and smoke or dust was emitted from the top of the shaft. The force of the explosion was sufficient to lift the sinking trolly a short distance into the air and to displace the massive timber frame carrying the trolly and its rails. Except for this displacement and the derailment of the front wheels of the trolly no material damage was done. The empty bucket was speedily lowered into the shaft, and the men raised to surface. All were suffering from extensive burns. They received prompt medical attention and were accommodated in an unoccupied

bungalow close by. None of them, however, survived longer than fifty-four hours. From statements made by the victims it appears that the explosion was caused by one of the deceased who struck a match to light a cigarette.

Three days later when the official inquiry was held there was about three feet of water in the bottom of the shaft. Bubbles of gas were rising to the surface in two or three places, but the quantity of gas was small. The flame of a safety lamp held over the stream of bubbles was unaffected. It seemed unlikely that the quantity of gas then being emitted would be sufficient to cause an explosion. It may be presumed, therefore, that the blasting done a few hours before the explosion took place had released an accumulation of gas in the strata, and that most of this gas had since been discharged. After the blasting no lights were taken into the shaft, as the light of day fully illuminated the bottom of the shaft. If lights had been in use it is probable that the gas would have ignited quietly and burnt without explosive effect. In the event, however, the gas continued to mix with the air until the proportion of gas became about six per cent. when ignition with little explosive violence would take place.

Although ignitions of small quantities of gas in sinking shafts are not uncommon in India, and are usually harmless, yet it is usual to use safety lamps where gas has actually been encountered or where a seam of coal from which gas may be emitted is about to be pierced. In this case although safety lamps had been provided the manager omitted to take that precaution, but it was not considered that his neglect amounted to criminal negligence or merited a prosecution for viclation of General Rule 15.

After the accident instructions were issued that all three sinking shafts were to be regarded as gassy mines, and that no naked lights were to be allowed in them.

No. 3.—The New Beerbhum Coal Company, Limited's Victoria coal mine.

This accident, resulting in the death of one person, was caused through a miner entering an inadequately ventilated gallery with an open lamp and igniting an accumulation of firedamp. A similar but non-fatal accident occurred at the same mine in 1915. Safety lamps were brought into use until the year 1917, when they were withdrawn, as no trace of firedamp had been found for several years. A weekly inspection of the workings with a safety lamp was, however, carried out as a precautionary measure.

The inquiry into the cause of this accident revealed that it would have been a simple matter to have directed a good current of air into the face of the gallery in which the explosion occurred. Further that although the underground overman and sirdar had been instructed how to test for gas neither of them had ever actually seen a gas cap in a safety lamp.

The dangerous practice of driving galleries ahead of the ventilation has frequently been remarked upon in the past, and it is deplorable that small explosions due to this cause should continue to occur practically every year. Safety lamps are now used at this mine.

FALLS OF ROOF.

No. 5.—The Burrakur Coal Company, Limited's Katras coal mine.

Four miners went to work in a coal mine before the sirdar had made the statutory inspection of the mine, as required by the rules. One of them was killed by a fall of roof. This accident might have been avoided if the deceased and his companions had waited until the place had been examined by the official appointed for the purpose. It would probably have been prevented if the entrance to the mine had been provided with a locked gate, as is required by the rules. For the former offence the three survivors were convicted and sentenced to two weeks' rigorous imprisonment, and for the latter offence the manager was convicted and fined.

It was for the prevention of accidents such as this that the rules requiring locked gates at mine entrances were made, and it is to be hoped that managers will take warning from this case, and will see that gates are provided, kept in proper repair, and regularly used.

No. 9.—The Raneegunge Coal Association, Limited's Kustore South coal mine.

Pillars were being extracted at this mine when a premature collapse took place, and three miners were entombed. As a thickness of not less than thirty feet of rock had fallen the bodies could not be recovered. The coal seam is No. 15 seam, 20 feet in thickness. In the first working pillars, 45 feet square, had been formed by driving galleries, 15 feet in width. The extraction of these pillars was in progress. The method adopted was to divide a pillar into four equal portions or "stooks" by splitting it in two directions, and to take out the "stooks" one by one in rotation. An area, about 300 feet by 200 feet, had been dispillared successfully. The position at the time when the accident took place is shown in plan A. A pillar had been split forming four "stooks" in the usual way. The first "stook" (C) had been extracted and the timber withdrawn. The second "stook" (D) had also been extracted, but the timber had not been withdrawn. The third "stook" (B) was then attacked, but, owing to a "fault" which passed through it, the manager decided to leave it until the fourth "stook" (A) had been extracted. The extraction of the fourth "stook" had proceeded until it had been reduced to dimensions approximately 11 feet × 7 feet when collapse took place with so little warning that three of the eight miners at work were unable to make their escape and were buried. The fall measured 60 feet × 47 feet, and previous to the collapse it was supported by the "stook," 11 feet × 7 feet, and by props the number of which was variously stated to be not less than 26 and not more than 40.

The Inspecting officer who inquired into the circumstances of the accident was of opinion that the whole area was insufficiently timbered. He calculated that over a length of about 35 feet the props must have been more than 10 feet apart.

Successful extraction of pillars by this method requires that the splits should be kept as narrow as possible, that the timbering should be sufficient and regularly distributed, and that as the extraction of coal proceeds the timber should be withdrawn in small sections so that there is never any large area of roof standing on timber. Had these principles been followed the accident would probably not have occurred.

Accidents such as these would be fewer if at every mine where pillars are being extracted the manager would lay down definite rules as to the maximum permissible width of splits, the distance apart at which props should be set, and the maximum area of roof which may be supported by props at one time. In the new draft rules for coal mines it is proposed that managers in consultation with the Inspector of Mines shall draw up such rules on these lines as may be appropriate for the particular seam concerned.

No. 37.—His Highness the Maharaja of Kassimbazar's Ekra coal mine.

At this mine pillars in a coal seam, 22 feet in thickness, were being extracted. In the major portion of the workings the full thickness of the coal had been cut in forming the pillars, but in the district where the accident took place the galleries had been driven in the lower half of the seam. The method of extracting the pillars was to take out the lower portion of the seam and to support the coal, 10 feet in thickness, left in the roof on props. After the lower portion of a pillar had been extracted the timbers were withdrawn, and when the roof coal had fallen it was loaded up, and props set under the stone roof as soon as the removal of the fallen coal would permit.

In this case props had been withdrawn some three weeks before, but the roof coal had not fallen. Access to the place was prevented by means of a single wire fence. One of the deceased who had been cutting floor coal near by passed through the fence and began to load up fallen coal. Whilst so

engaged he was struck down by a fall of coal. Two other miners ran to his rescue, but whilst they were extricating him a further fall of coal took place and killed all three men. The recovery of the bodies was a dangerous operation, and was interrupted by the fall of some 30 to 40 tons of coal.

A "dropping" method of extracting pillars has been in operation at the East Indian Railway Company's Giridih collieries with great success for many years. The conditions there are, however, entirely exceptional. The coal is of a homogeneous character and is not traversed by pronounced joints. The roof consists of a great thickness of massive sandstones, and it does not collapse until a large area has been dispillared. Large pillars (88 feet square) are formed by galleries driven in the lower portion of the seam. The roof coal is then extracted over an area of one quarter of a pillar, and this is done by making narrow vertical cuts which extend up to the roof and separate the roof coal to be dropped from the remainder of the pillar. When this has been done the "stooks" supporting the roof coal are reduced as far as possible, and subsequently blown out by charges of high explosive, permitting the roof coal to fall. The coal is then loaded out, and occasional props are set to the roof to give warning of any bending of the roof which may take place. The roof is exceptionally strong and invariably gives ample warning before collapse takes place. The conditions, however, are exceptional and this method of working cannot be adopted with safety elsewhere.

In this particular case no vertical cut had been made so as to separate the roof coal from the pillars of coal remaining. The edges of the pillars were found to be very ragged with cornices of roof coal projecting from 10 to 30 feet from the pillars. It was agreed to discontinue this method of working, and to cut up the galleries to the full height of the seam before attacking any new pillars.

No. 47.—The Katras Jharia Coal Company, Limited's Seebpur coal mine.

From time to time in previous Annual Reports adverse comments have been made on the practice of carrying roof coal on timber in pillar cutting operations. In this case a large area of roof coal, 3 feet thick, was being carried on vertical props. An attempt was being made to cut down a portion of this roof coal, and this disturbed the equilibrium of the layer, and, there being nothing to prevent horizontal movement, a mass of some 40 tons of coal was released from between two parallel "slips," and fell causing the death of four men.

After the accident the agent of the colliery agreed that where a large area of roof coal is standing on timber it is dangerous to cut away any portion of it. He issued instructions that where roof coal is to be got in an area where pillars are being extracted all such roof coal shall be removed at least one pillar in advance of the pillar under extraction. Agents and managers of coal mines where the conditions are similar will be well advised to issue similar instruction on these lines to their subordinates.

FALLS OF SIDE.

No. 73.—The East Bagdiggi Colliery Company's East Bagdiggi coal mine.

This accident is a striking example of the reckless disregard for human lives displayed by certain colliery owners in the working of coal quarries. A coal seam, 23 feet in thickness, dipping at an angle of 60° was being quarried. In a quarry, 34 feet in depth, twelve persons were engaged in cutting and carrying coal at the foot of an overhanging mass of roof stone and coal, when a fall of stone and coal, 33 feet long by 6 feet high and 1 to 3 feet thick, suddenly occurred killing five of them instantly. At the time of the official inquiry it was found that the whole of the quarry had been worked in a most dangerous manner, the coal having been excavated so as to leave masses of overburden overhanging. This overburden consists of shale with numerous smooth joints from which masses fall away readily. In spite of this the working of the coal had been carried to a depth of from 12 to 16 feet below the overhang.

Criminal proceedings were instituted against the owner, agent, manager and contractor. The owner was convicted and fined Rs. 500, the agent was convicted and sentenced to three months' rigorous imprisonment and a fine of Rs. 500, the manager was convicted and fined Rs. 10, and the contractor was convicted and fined Rs. 50. The agent appealed, but his appeal failed, and the Judge who heard the appeal expressed the opinion that the penalties were insufficient. If the case had been taken under the Indian Penal Code the sentence might have been imprisonment for two years. The Magistrate who tried the case has expressed the opinion that the penalties under the Indian Mines Act are too light. The advisability of rendering the penalties under the Indian Mines Act more drastic is under consideration.

There has been a great increase in the quarrying of coal during the last year or so, and a great deal of the time of the officers of the Mines Department has been taken up in inspecting such quarries. Numerous accidents have taken place in quarries, and in many of these cases the management alleged that the deceased were to blame as they had been robbing coal in parts of the quarries which had been fenced off as they had become dangerous. Such a defence is suspicious to a degree. Quarries should be worked in such a way that it is only very exceptionally necessary to fence off portions of them on account of danger. The sides of quarries should be stepped or sloped in such a way that falls of overburden cannot occur. In the new draft rules for coal mines it is proposed to strengthen the rules regulating the working of quarries.

It is to be hoped that the severe penalties imposed in this case will act as a warning to others. The workers in quarries are frequently both ignorant and unintelligent, and it is criminal to expose them to dangers which they do not properly appreciate.

Nos. 87 and 119.—The Bhulanbararee Coal Company, Limited's Bhulanbararee coal mine.

The great scarcity of coal and the preference of labourers for working in quarries rather than underground has led to the quarrying of pillars of coal which had originally been formed by underground mining. At this mine pillars of coal in a thick and highly inclined coal seam were being quarried. Whilst a miner was cutting the coal forming the roof of an old gallery the roof collapsed. He was precipitated into the gallery below and killed instantly by the coal which fell with him. Five months later two coal carriers were carrying coal in an adjacent quarry when the pathway subsided into an old gallery below. They also were killed.

The danger to persons employed in such workings is great, particularly where the coal seam is highly inclined. Care should be taken to locate the position of the galleries and to remove the partitions between such galleries and the quarry. In many cases the only safe way is to pack the galleries with debris before commencing quarrying operations. In this particular case the agent of the mine undertook that this should be done in future.

No. 95.—The Raneegunge Coal Association, Limited's Alkusa South coal mine.

Three persons were sleeping underground in a mine when a mass of side coal, weighing some 14 tons, fell upon them, killing them instantly. The place of accident was adjacent to an area where pillar extraction was in progress. In such a situation roof "weight" on the pillars adjacent to the goaf is liable to cause masses of coal which appear to be sound to become detached and fall from the pillars, and this is what appears to have occurred in this case.

The practice of sleeping underground in a mine is only too common, although it is usually forbidden and was expressly so forbidden in this case. Officials should exercise greater vigilance in discouraging the practice. At the present time it is not unusual for coal miners to work for some hours, eat and then sleep, usually on the surface, and then to return for another spell of work. The institution of regular shifts would discourage this, and many managers would welcome the statutory regulation of hours of labour. They are at present deterred from regulating hours by the fact that miners would probably

resent the enforcement of the regulations and leave their mines for other mines where such regulations were not in force. Were the hours of labour regulated many difficulties in respect of supervision would disappear, and the efficiency of inspection by officials would increase.

IN SHAFTS (MISCELLANEOUS).

No. 155.—The Burrakur Coal Company, Limited's Katras coal mine.

This accident forms a striking example of the lack of care and arrangement in fixing machinery which is often displayed at mines in India. Five sinkers were standing on a scaffold suspended in a shaft from a winch at surface, and were engaged in dressing the sides of the shaft. Stone from the side of the shaft fell upon the scaffold, and its weight was sufficient to carry away the winch at the surface, and to cause the scaffold to descend some 20 to 30 feet. The winch swung across to the top of the shaft and displaced some heavy fencing planks, and these fell down the shaft, killing three of the men and injuring another. The arrangement of the machinery and the manner in which the accident occurred is illustrated by plan B.

At the inquiry it was disclosed that the winch was not secured in any way to the masonry pillar on which it rested, but was merely held in position there by its own weight and the weight of a platform loaded with stone which rested on the wooden frame to which the winch was secured. The total weight was about 8½ tons, whereas the dead weight of the scaffold, chains, rope, bucket and men was about 1¾ tons. In the event of heavy stones falling on to the scaffold in the course of the operations of dressing the sides of the shaft the live load would be very much greater. No allowance had, however, been made for this fact. In the course of the inquiry it was ascertained by experiment that a weight of 3½ tons was sufficient to drag the winch from its seat.

Mr. F. L. G. Simpson, Inspector of Mines, No. 1 Circle, after a full inquiry into the circumstances of the accident was of opinion that the accident was due to the absence of proper arrangement for holding down the winch on its foundation. He considered that it was a grave error of judgment not to anchor the winch either by pulleys let into the foundation or from ground posts or in some other suitable manner. As no breach of rules under the Indian Mines Act was involved, and as it was thought that the error of judgment which led to the accident would not in law be considered to be a rash and negligent act criminal proceedings were not instituted.

After the accident the winch was replaced by two winches at ground level, and these were properly secured by weights and ground pins in such a position that the angle over the guide pulleys was increased. The agent of the colliery sent to the managers of all the collieries controlled by him instructions that in future all winches used for raising, lowering or supporting persons should be fixed on sound masonry foundations and secured by bolts of ample strength.

HAULAGE.

No. 177.—The Pandaveswar Colliery, Limited's Pandaveswar coal mine.

At Indian mines there are many thousands of miles of road on which trams are propelled by hand. Accidents on these roads, due to the trams running wild down slight grades, frequently occur. In most cases these are due to omission to "sprag" the wheels of the trams.

In this case a tram which was being loaded with coal was standing on a tram line with a gradient of 1 in 40. The "locker" or "sprag" in the wheel of the tub slipped out, and the tub ran forward over a woman who was sitting on the line only a few feet away. The woman sustained fatal injuries.

At the inquiry it was found that the "sprag" used consisted of a piece of iron 1 inch in diameter and 18 inches in length. It is a simple

matter for a "sprag" of this kind to slip out of the spokes of a wheel. A "sprag" should be so constructed that it is impossible for it to slip through the spokes. This can easily be done by turning over one end of the bar so as to form a loop too large to pass between the spokes. Another plan is to drill a hole through the end of the "sprag" and pass through it an iron ring larger than the space between the spokes of the wheels. The use of wooden "sprags" is to be deprecated. They readily slip out from between the spokes, and, moreover, they frequently break, and are thus liable to bring about accidents.

Nos. 181 and 188.—The Samla Kendra Collieries, Limited's Chatrisgonda coal mine.

These two accidents occurred on the same haulage incline, and were due to the carelessness of the banksman and sirdar, and to the inadequacy of the precautions taken to prevent runaways. In both instances several tubs ran away down the incline from the surface, demolished the stop-block *en route*, and struck and killed a man. The sirdar and banksman, through whose carelessness the first accident took place, were prosecuted, but the former was held not to have been responsible, and the latter absconded.

At the time when these accidents took place there were two stop-blocks at the top of the incline and another some 300 feet below the top. It is bad practice to multiply safeguards of this kind. A frequent result of providing more than one safeguard is that both are unused, *i.e.*, stop-blocks are left open permanently and points fixed in position for the inclines. It is sufficient if, in addition to the stop-block at the top of the incline, runaway points are provided and kept in good order. Such points should be loaded for the turn out, and operated by a wire or rod from the top of the slope, and a standing order should be issued that the points should not be set for the incline until after the train is in motion and the leading tub is approaching the points. Such is now being done at all the collieries controlled by the agent of the colliery at which these accidents occurred.

No. 189. The Jainty Central Collieries, Limited's Jainty Central coal mine.

This is another instance of the danger of sleeping underground in a mine. Whilst some thirteen persons were sleeping in a manhole at the side of an underground haulage slope some tubs ran wild from the top of the incline. Being awakened by the noise of the tubs coming down the incline some of these persons ran out of the manhole and were struck by the tubs. One woman was killed and three other persons were injured.

For the running away of the tubs the banksman was at fault. In the first place he omitted to attach one of the coupling chains. His more serious mistake, however, was to close the runaway points before opening the stop-block, thus destroying the utility of the device provided to prevent a runaway in the event of a missed coupling. It appears that he was accustomed to sprag the empty train a short distance above the stop-block, and then to close the runaway points and secure the operating handle in the closed position by means of a wooden wedge. He then opened the stop-block and started the tubs in motion by removing the "sprags." The proper procedure would have been to lower the tubs against the stop-block, couple them up, signal to the engineman to draw up the rope until all the coupling chains were tight and the leading tub drawn back sufficiently far for the stop-block to be opened. The train should then have been lowered down the incline, and the runaway points closed by means of the lever just before the train reached it.

For his neglect criminal proceedings were instituted against the banksman, but he absconded and his whereabouts could not be ascertained. He was not, however, solely to blame. If the mine officials had been fully alive to their duties and responsibilities, they would have insisted on the proper use of the safety appliances provided to prevent accidents of this class.

MISCELLANEOUS ON SURFACE.

No. 225.—Chamanlal Mangaldass and Company's Kendwadih coal mine.

At this colliery it became necessary to erect a vertical boiler in a certain position. The manager obtained the loan of a small crab winch from a neighbouring colliery. This winch was in very poor repair, as there was neither a "pawl" nor a brake on it, and some of the teeth of its gearing were broken. The handles, moreover, were makeshifts and longer than the original handles. Whilst the boiler was being lifted into position the winch was manned by seven men, and one of the handles broke causing the other handle to whirl round and strike one of the men on the head, fracturing his skull.

According to the evidence given at the inquiry both the manager and the mistry knew of the bad condition of the winch. Both stated that they told the contractor and his men not to use that winch but another larger winch for lifting the boiler. Neither of them, however, took any steps to ensure that the larger winch was used. The contractor, however, cannot be held blameless for his experience should have taught him that he was running a grave risk when he put seven men on the handles of a broken down winch. As responsibility in this case was divided and, moreover, no breach of rules was involved criminal proceedings were not instituted. The occurrence of a preventable accident such as this is, however, discreditable to all concerned.

EXPLOSIVES.

(Non-fatal accident.)

The Tata Iron & Steel Company, Limited's Sijua coal mine.

There are only two recorded cases of explosions of coal dust in Indian mines. One of these occurred in the Raniganj coalfield in 1913 and caused the death of 27 persons. The other took place in 1908 at a colliery in Baluchistan where 20 lives were lost. Both were considered to have been initiated by small explosions of gas.

This case, however, is one of the ignition of coal dust by blasting operations. It caused serious injury by burning to three men. The place of accident was a narrow heading partly in coal and partly in stone which was being driven in the vicinity of a new shaft. The heading was 10 feet wide and 6 feet high. It had been driven to a distance of 90 feet from the shaft, and in that distance there were two right angle bends. The stone which came from the driving had been packed along the side of the road so that the available width had been reduced to from 3 to 5 feet. The position of matters at the time when the accident took place is illustrated by plan C.

In the lower portion of the face of the gallery, and within an area, 7 feet long by 2½ feet high, ten holes had been drilled in the coal. These holes were charged with 5 lbs. of dynamite, and the charges were subsequently exploded, producing flame which traversed the two right angle bends and burnt three men who were seated near the shaft at a distance of 90 feet from the face. These men stated that half a minute after the explosion of the shots a thick cloud of dust and smoke came out and was followed by a red flame which went back, but returned after a few seconds and then went back and died out. The previous blasting which had been done had produced a quantity of very fine coal dust, and this had settled in the interstices between the stones packed in the gallery. It seems probable that the first shots which exploded raised a cloud of fine coal dust, and that this was ignited by the flame from other shots which were probably blown out.

The firing of a number of heavy charges of high explosive in such close proximity to one another, and in a place which was dry and dusty is a practice to be avoided. Had the workings been extensive and containing deposits of fine coal dust such as is commonly the case in the vicinity of haulage roads, the effects might have been very serious.

Section IV.—Prosecutions and Additions to the Act.

Prosecutions.

Judgment was given in the following prosecutions during the year. Unless otherwise stated "rule" means a rule under Notification No. 864—68—20, dated the 10th March 1904, being rules for the working of coal mines.

The owner and manager of Samanta Brothers' Egarcoor coal mine were prosecuted under Rules 1, 7 and 19. They were each fined Rs. 15, in default one day's simple imprisonment.

The owners (three) and manager of the West Ghusick Coal Company's West Ghusick coal mine were prosecuted under Rule 19. They were each fined Rs. 3.

The owners (two) and manager of the West Dobalia Coal Company's West Ghusick coal mine were prosecuted under Rules 2 (*g*), 4 and 20 for not appointing a qualified person to examine appliances by which persons ascended and descended the mine, for not causing an examination to be made of parts of the mine through which persons had to pass, and for not fencing the moving parts of a winding engine. The owners were fined Rs. 60 each. The case against the manager was dropped as he was reported to have died.

The owners and manager of Babu J. C. Dutt's Chapapur coal mine were prosecuted under Rules 3, 4 and 19. They were each fined Rs. 15, in default one day's simple imprisonment.

The owner of Babu G. L. Mukherjee's Pahargora coal mine was prosecuted under Rules 3, 4 and 19 for not causing an inspection to be made of working places in the mine, for not keeping working places in the mine secure and for not fencing the top of a quarry and disused shafts. He was fined Rs. 40.

The owner and manager of R. P. Singh's Kalipahari coal mine were prosecuted under Rules 2 (*g*) and 4 for not providing an indicator on the winding engine and not having working places in the mine inspected daily. They were each fined Rs. 40.

The owners and manager of the Rampur Colliery, Limited's Rampur coal mine were prosecuted under Rules 3, 4 and 19, for not keeping travelling roads in the mine in a safe condition, for not having working places in the mine inspected daily and for inadequately fencing old workings. They were fined Rs. 25 and Rs. 10, respectively.

The owner and manager of Babu B. B. Ghose's Sibdaspur coal mine were prosecuted under Rule 19 for not fencing the quarries. The owner was acquitted. The manager was fined Rs. 20.

The manager of Babu S. N. Bose's Bandarchua coal mine was prosecuted under Rule 3 for not keeping the working places in a quarry secure. He was fined Rs. 10, in default three days' simple imprisonment.

The manager of the Burrakur Coal Company, Limited's Katras colliery was prosecuted under Rule 5 of Bihar and Orissa Government Notification No. 11761-M., dated the 23rd August 1918, for not providing a gate at an entrance to the mine. He was fined Rs. 10.

The owners, agent and manager of Babu Shewramdas Ramniranjandas' Laxmi coal mine were prosecuted under Rules 3 and 4 for not keeping the roof and sides safe, for not appointing a competent person to make a daily inspection of working places in the mine and for not maintaining a daily report book. The owners were acquitted. The agent and manager were fined Rs. 10 and Rs. 5, respectively.

The agent and manager of Agarwalla Brothers' Bokharo-Jharia coal mine were prosecuted under Rule 3 for not keeping secure the sides of working places in the quarry. The proceedings were dropped. The mine-owner donated a sum of Rs. 400 to local hospitals.

The owner, agent, manager and contractor of the East Bagdiggi Coal Company's East Bagdiggi coal mine were prosecuted under Rule 3, for not keeping the side of a quarry secure. The owner was fined Rs. 500, in default one month's rigorous imprisonment. The agent was sentenced to three

months' rigorous imprisonment and also fined Rs. 500, in default a further one month's rigorous imprisonment. The manager was fined Rs. 10, in default one month's rigorous imprisonment. The contractor was fined Rs. 50, in default one month's rigorous imprisonment.

The owner and manager of Ramchandra Shewdanmal's Dhansar coal mine were prosecuted under Rules 3 and 19 and Special Rule 22, for not keeping working places in the mine safe, for not fencing the quarry and for not appointing a competent person to inspect working places in the mine. The owner was fined Rs. 150, in default fourteen days' rigorous imprisonment, and the manager Rs. 50, in default ten days' rigorous imprisonment.

The owner, agent and manager of Babu Nafar Chandra Pal Chowdhury's Budiadih coal mine were prosecuted under Rules 1, 3 and 14, for employing persons in a mine without providing a second outlet, for not keeping the roof in the mine secure and for not providing adequate ventilation in the mine. The manager of the mine absconded and the agent was reported to have died. The owner was convicted and fined Rs. 75 on each count, in default six weeks' simple imprisonment.

The owner, agent and manager of C. M. & Company's Kendwadih coal mine were prosecuted under Rule 3 for not keeping working places in the mine safe. They were fined Rs. 100 each.

The manager, under-manager and sirdar of Jagmohan Ramjibon Marwari's Satpokuria-Kristoganj coal mine were prosecuted as follows:— The manager, under Rule 8 of Government of India Notification No. 11793-103, dated the 30th December 1908, and Special Rules 22 and 27. The under-manager under Rule 8 of Notification No. 11793-103, dated the 30th December 1908, and Special Rule 32, and the sirdar under Rule 4 and Special Rule 37. The manager was fined Rs. 30, in default 30 days' simple imprisonment. The under-manager was acquitted and the case against the sirdar was dropped as he was not traceable.

The owner and manager of the Begunia Coal Concern, Limited's Khudika coal mine were prosecuted under Rules 1 and 20 and Rule 3 of Bengal Government Notification No. 3970-Com., dated the 28th August 1918, for not providing a second outlet to the mine, for not fencing exposed and dangerous parts of a haulage engine, and for not providing gates and keeping them in repair at the entrances of inclines. The owners were fined Rs. 20, in default thirty days' simple imprisonment. The manager was acquitted.

The agent and manager of the East Barari Coal Company's Jinagora coal mine were prosecuted under Rule 19 for failure to fence the quarry properly. They were each fined Rs. 10.

The owner of Babu J. P. Lalla's East Mandra coal mine was prosecuted under Rule 12, for failure to submit a plan of the abandoned workings of the mine. He was fined Rs. 10.

The owner of Pir Mohan Lal's Muraidih coal mine was prosecuted under Section 16 of the Act, for failure to submit a notice of the opening of the mine. He was acquitted.

The owner of the Central Muraidih Coal Company's Central Muraidih coal mine was prosecuted under Section 16 of the Act, for failure to submit a notice of the opening of the mine. He was acquitted.

A shot-firer employed at the Pench Valley Coal Company, Limited's Barkui colliery was prosecuted under Section 304(*a*), Indian Penal Code. He was convicted and sentenced to two years' rigorous imprisonment.

Sixteen prosecutions were instituted for non-submission of annual returns for the year 1920 on the prescribed date. Two cases are pending as the accused have not been traced. In the other fourteen cases fines aggregating Rs. 315 were imposed.

Information was received of the following prosecutions instituted by colliery officials against their subordinates under the Special Rules made under Section 21 of the Act:—

A time-keeper of the Joba Coal Company, Limited's Joba coal mine prosecuted a fireman, under Rule 4, for absenting himself from work without

previously obtaining permission. The case was withdrawn as the accused was not traceable.

The agent of the Samla and Kendra Collieries, Limited's Samla and Kendra coal mine prosecuted a sirdar and hookman, under Rules 5 and 4, respectively. The sirdar could not be traced. The hookman was acquitted.

The agent of the Bengal Nagpur Coal Company, Limited's Bhuggutdih coal mine prosecuted three trollymen under Rules 5, 77 and 78. The accused could not be traced. The case is pending.

The manager of the East Indian Coal Company, Limited's Barari coal mine prosecuted a miner's sirdar, under Rule 21, for robbing coal from a pillar. The accused absconded and could not be traced.

The manager of the Sitarampur Coal Company's Narsamuda coal mine prosecuted a sirdar and a shot-firer under Rules 4, 5, 84 and 85. The accused could not be traced. The case was dropped.

The manager of the Baraboni Coal Concern, Limited's Chotanuni coal mine prosecuted an onsetter, under Section 337, Indian Penal Code, and Rule 5, for neglecting to sprag the wheel of a tub whereby an accident resulted. He was acquitted.

The manager of the Equitable Coal Company, Limited's Dishergarh coal mine prosecuted a pump khalassi under Rule 5, for allowing an electric motor to take fire and thus endangering the safety of persons in the mine. He was fined Rs. 10, in default two weeks' simple imprisonment.

The manager of Babu N. M. Chowdhury's Niluripatra coal mine prosecuted two miners under Rules 5 and 18. The accused absconded and could not be traced.

The manager of the Burrakar Coal Company, Limited's Katras coal mine prosecuted three miners, under Rules 5, 7 and 15, for entering the mine at night without permission. They were convicted and sentenced to two weeks' rigorous imprisonment.

The manager of Villiers Limited's Jainty Central coal mine prosecuted a banksman, under Rule 78, for neglect to properly couple a train of tubs before removing the stop-block. The accused absconded and could not be traced.

One permit granted to a manager of a small mine was cancelled during the year on account of mismanagement disclosed by inspection.

ADDITIONS TO THE ACT.

During the year Special Rules, under Section 21 of the Act, were established at 46 coal mines and one manganese mine. Special Rules have now been established at 607 coal mines and 40 manganese mines.

Section V.—General Remarks.

HEALTH AND SANITATION.

The Asansol Mines Board of Health held 9 ordinary meetings and 8 special meetings during the year. Dr. J. W. Tomb, Chief Sanitary Officer, reports that there were 1,250 cases of cholera with 617 deaths and 74 cases of small-pox with 10 deaths, as compared with 368 cases of cholera with 170 deaths, and 795 cases of small-pox with 65 deaths during the previous year. The number of deaths from influenza recorded was 392, as against 748 during the year 1920. On the whole the general health of the mining community was good.

The Board's anti-malarial staff continued their investigations throughout the year. Through the kindness of the Provincial Director of Fisheries larvacidal fish have been introduced into certain tanks in the Mining Settlement, and it is hoped that it may be possible to cultivate them successfully in many of the tanks of the Mining Settlement which harbour malaria-bearing mosquito larvæ.

The lectures on sanitation and hygiene in all upper and lower primary village schools in the Mining Settlement were continued, and the Board's primer on "Elementary Hygiene" was distributed to the scholars, free of charge.

The Jharia Mines Board of Health held 15 ordinary meetings and 10 special meetings during the year. Dr. G. W. Thompson was Medical Officer of Health during the whole period.

The area of the Jharia Mining Settlement was extended so as to embrace the whole of the Dhanbad sub-division, including Dhanbad municipality.

The Epidemic Diseases Act remained in force throughout the year, and the Medical Officer of Health continued to be the authority appointed under the Act.

The new Bihar and Orissa Mining Settlement Act became law in August 1920, but up to the end of 1921 the Local Government had not prescribed the rules or approved the bye-laws under the Act.

There were 777 cases of cholera with 314 deaths and 207 cases of small-pox with 3 deaths, as compared with 191 cases of cholera with 58 deaths and 1,363 cases of small-pox with 75 deaths in the previous year. The general health of the mining community was good.

The rainfall in the Jharia coalfield was 44·65 inches, and at the Jharia Water Works near Topchanchi it was 53·77 inches. In the Raniganj coalfield the figures from three reporting centres within a radius of seven miles were 26·51, 41 77 and 63·25 inches, the average being 43·85 inches. In the Giridih coalfield the recorded rainfall was 31·68 inches. The figures for the previous year were 47·85 inches, 72·50 inches, 47·90 inches, and 68·49 inches, respectively.

MINING EDUCATION.

The Principal of the Bengal Engineering College has reported that in the examination for the Diploma in the principles of mining held at the end of the college course in March 1921, of the fourteen students who appeared at the examination twelve were granted Diplomas; in the junior course twenty-one were enrolled at the beginning of the sessions, fifteen sat for examination, and thirteen qualified for promotion to the senior course. In this latter figure two special students are included. Twenty-six students entered the preliminary or preparatory class on the mining side, and of these eighteen were promoted.

The annual mining camp was pitched in November and December 1921 at Dishergarh on the site near the Equitable Coal Company's office. The usual courses of practical work were undertaken and visits of inspection paid to various plants and appliances of technical interest in the vicinity. The total number of students in the camp was 43, of whom 10 were special survey students.

The Mining Education Advisory Board held four meetings during the year. The mining lecturers appointed by the Board at different centres in the coalfields were Mr. M. R. Read at Dishergarh, Mr. David Jones at Raniganj, Mr. A. Clubb at Jamuria, and Mr. J. McArthur at Jharia and Sijua.

The sessional examination was held in May, the examiners being Mr. F. L. G. Simpson, Inspector of Mines in India, and Mr. J. Thomas, Officiating Professor of Mining, Bengal Engineering College. Of the 57 candidates who qualified to sit for examination 25 presented themselvs for examination and 19 were successful. As a result of the examination special mining scholarships, tenable at the Bengal Engineering College, were awarded to Babu Nishi Bhusan Ghosh and Mr. B. T. Morehead.

Babus Rash Behari Mondal and S. N. Bhattacharyya were appointed as mining lecturers in Bengali and Hindi, respectively, and delivered the usual courses of lectures in the Raniganj and Jharia coalfields.

At the commencement of the 1921-22 sessions two full-time appointments were made to the mining lecture staff in the Jharia coalfield, Mr Griffith Jones, B.Sc., being appointed lecturer and Babu N. N. Sen, assistant lecturer.

A new scheme of instruction comprising a three-year course (see Appendix, page 95) was put into operation. 236 students were enrolled. It is hoped that the new lecture halls at Jharia and Sijua will be ready for occupation by the commencement of the next session.

A similar scheme for an improvement of the mining classes in the Raniganj coalfield has been drawn up, but little progress has so far been made.

Funds for these mining educational schemes are provided by the Governments of Bihar and Orissa and Bengal, but substantial contributions are made by the Indian Mining Association and the Indian Mining Federation.

BOARD OF EXAMINERS FOR COAL MINE MANAGERS' CERTIFICATES.

There was no change in the personnel of the Board. Nine meetings were held during the year.

Twenty first class certificates of competency were granted in lieu of British certificates.

At the examinations for colliery managers' certificates of competency held at Dhanbad, on the 14th, 15th and 16th and 21st, 22nd and 23rd February 1921, sixty candidates sat for first class and seventy-seven for second class certificates. Certificates of competency were granted to seventeen first class and six second class candidates.

An examination for colliery managers' second class certificates of competency was held on the 2nd, 3rd and 4th November 1921. One hundred and ninety-seven candidates appeared for examination, of which number forty-seven were successful and were granted certificates.

The examiners for the first class examination in February were Messrs. H. M. Tarlton, J. Wilson and F. L. G. Simpson, Inspector of Mines in India (official examiner and secretary) and for both the second class examinations Messrs. W. Weir, R. Purdy and Mr. F. L. G. Simpson (official examiner and secretary).

The Regulations made by the Board of Examiners were amended at a meeting of the Board on the 23rd February 1921, and the amended regulations were duly published in the official gazettes. These Regulations are reproduced in Appendix IV, Statement No. 7.

MINING BOARDS IN BENGAL, BIHAR AND ORISSA AND THE CENTRAL PROVINCES.

The Bengal Mining Board held no meetings during the year. All matters referred to the Board were considered by circulation to the members. Such matters were:—(1) Amendments of the rules made under the Bengal Mining Settlements Act, 1912; (2) proposals for the conservation of coal; (3) amendments of the statistical forms to be submitted under the Indian Mines Act, 1901; (4) proposed legislation for the provision of compensation to workmen for injuries received in the course of their employment; and (5) the amendment of the Indian Mines Act, 1901. The non-official members were Messrs. W. Graham and Glen George.

The Bihar and Orissa Mining Board held three meetings during the year. Questions relating to coal conservation, the amendment of the statistical forms to be submitted under the Indian Mines Act, and the amendment of the Indian Mines Act, 1901, were considered by the Board. The non-official members were Messrs. R. G. M. Bathgate and J. Mackie.

The Central Provinces Mining Board held one meeting during the year, and considered business as follows:—(1) Proposed modifications in the conditions of prospecting licenses, and the basis for the grant of certificates of approval; (2) facilities for technical mining education in the Province. The non-official members were Messrs. H. D. Coggan and R. S. Davies.

MINING AND GEOLOGICAL INSTITUTE OF INDIA.

The total membership at the end of the year, including subscribers, was 320. At the annual meeting and at two ordinary meetings papers were read and discussed. Two visits were paid to coal mines and to the central power station in the Raniganj coalfield, and there was also a geological field excursion. An innovation was the holding of a member's social gathering as a prelude to which an interesting and instructive lecture was delivered by Mr. D. Penman on "Mine Rescue Apparatus." The lecture was illustrated by lantern slides, and safety appliances were exhibited.

Three parts of the Transactions were published.

It was reported that the Subsidence Committee had discontinued its researches, and that the second and final report of the Committee had been prepared and would shortly be published.

A local branch of the Institute has recently been inaugurated in the Central Provinces, with head-quarters at Kamptee.

The Government prize for the best paper contributed during the year was awarded to Mr. R. R. Simpson for his paper on "Notes on a visit to the Burma Ruby Mines." The writer of this paper was also awarded the Institute's gold medal. The silver medal was gained by Dr. G. W. Thompson for his paper entitled "Ankylostomiasis, its cause, effects and prevention," whilst the bronze medal was awarded to Mr. J. Thomas for his paper entitled "Recent developments in lubrication, with special reference to graphite."

THE ASSOCIATION OF COLLIERY MANAGERS IN INDIA.

The Association has now 200 members. The business considered by the Council during the year included subjects as follows:—

(*a*) Two cases in which members had been dismissed by their employers and considered themselves aggrieved;

(*b*) Standard agreements;

(*c*) Superannuation;

(*d*) Coalfields Committee;

(*e*) Workmen's compensation;

(*f*) Signals in mines;

(*g*) Affiliation with the National Association of Colliery Managers in Great Britain. It was reported that the latter had been definitely arranged.

At one of the meetings an interesting paper on "Machine Mining" was read by Messrs. A. Barrowman and W. B. Hanson.

The Association was asked to nominate one of their members for membership of the Jharia Mines Board of Health. Mr. J. A. Oliver, President of the Association, was so nominated, and was subsequently appointed by the Government of Bihar and Orissa as a non-official member of the Board.

TRUE MERIDIAN LINES IN THE COALFIELDS.

In the Annual Report for 1911 plans were published showing the locations of true north lines laid down at six places in the Raniganj and Jharia coalfields. Plans showing the locations of four of these lines were reproduced in the 1919 Report. Since then the other two of the lines, the demarcation pillars of which had been destroyed, have been laid down afresh by an officer of the Survey of India. The location plans (Plan D) of these have been reproduced and are attached to this Report.

LAND ACQUISITION (MINES) ACT, 1885.

The number of original cases disposed of altogether at the end of 1921 stood at 441, thirty-eight of which were cases disposed of during the year.

Numerous applications for employment in coal mines are received in the office of the Chief Inspector. For the convenience of mineowners and managers a register of the names of applicants holding first or second class colliery managers certificates has been opened in the Chief Inspector's Office, and may be inspected on request.

OFFICIAL DUTIES, 1921.

Mr. R. R. Simpson was Officiating Chief Inspector of Mines from the 1st to the 10th January, and was Chief Inspector of Mines from the 11th January to the end of the year.

Mr. H. Lancaster was Inspector of Mines, No. 2 Circle, up to the 9th April, when he proceeded on privilege leave combined with furlough for 9 months and 18 days. He returned to duty on the 20th December.

Mr. F. L. G. Simpson was a temporary Inspector of Mines, and held charge of No. 1 Circle throughout the year. He held charge of both Nos. 1 and 2 Circles from the 10th April to the 20th December. At the end of the year he proceeded on two months' privilege leave, his temporary appointment to the Mines Department terminating on the expiry thereof. He had served in the Department for three years, and although the work was strenuous it had been to him a labour of love. The great zeal, tact and sagacity with which he performed his duties were remarkable, and the public spirit which he displayed in joining the Department at a time when owing to War conditions it was hard pressed, was most commendable.

Mr. D. Penman was appointed an Inspector of Mines on the 1st December 1921, and took over charge of No. 1 Circle on the afternoon of the 31st December.

Messrs. J. H. Lang and W. H. Goldsworthy were Junior Inspectors of Mines throughout the year.

Mr. J. G. Harding, Junior Inspector of Mines, was permitted to resign his appointment on grounds of ill-health with effect from the afternoon of the 16th June.

Messrs. G. S. Cameron, W. Kirby and H. R. Tallis were appointed Junior Inspectors of Mines on the 25th April, 28th April, and 16th December, respectively.

I have the honour to be,

SIR,

Your most obedient servant,

R. R. SIMPSON,

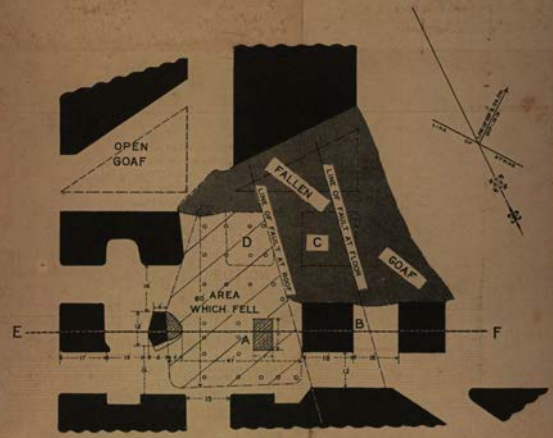
Chief Inspector of Mines in India.

PLAN ILLUSTRATING REPORT ON FATAL ACCIDENT BY FALL OF ROOF

AT

THE RANEEGUNGE COAL ASSOCIATION LTD.'S KUSTORE SOUTH COLLIERY

Scale 1 inch = 20 feet.



PLAN

SECTION ON E.F.

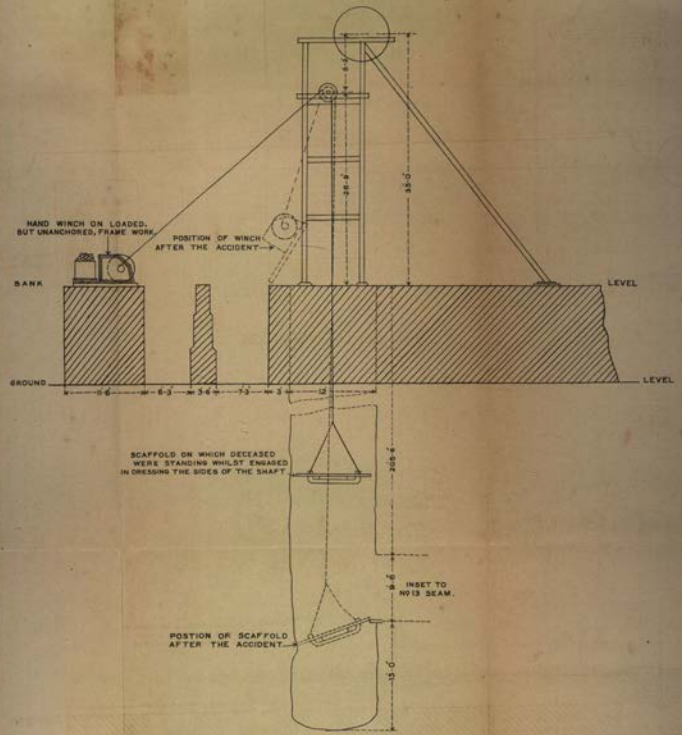
REFERENCES

- PILLARS OF COAL STANDING
- PILLARS OF COAL CRUSHED BY FALL
- PILLARS OF COAL EXTRACTED
- FALLEN GOAF BEFORE FALL
- AREA WHICH FELL
- ROOF STONE WHICH FELL

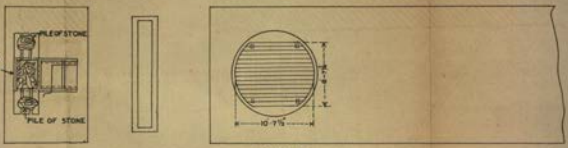
T.S. & CO. CALCUTTA.

PLAN ILLUSTRATING REPORT ON FATAL ACCIDENT IN A SHAFT AT THE BARAKAR COAL Co.. LTD.'s KATRAS COLLIERY

Scale 1 inch = 8 feet.

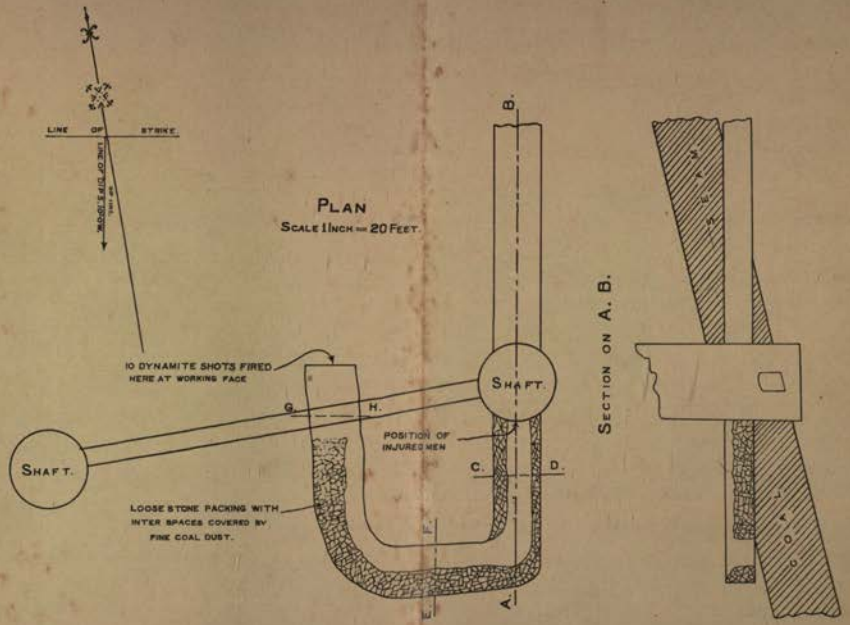

HAND WINCH ON LOADED, BUT UNANCHORED, FRAME WORK.
POSITION OF WINCH AFTER THE ACCIDENT
BANK
LEVEL
GROUND
LEVEL
SCAFFOLD ON WHICH DECEASED WERE STANDING WHILST ENGAGED IN DRESSING THE SIDES OF THE SHAFT
INSET TO No 13 SEAM.
POSTION OF SCAFFOLD AFTER THE ACCIDENT

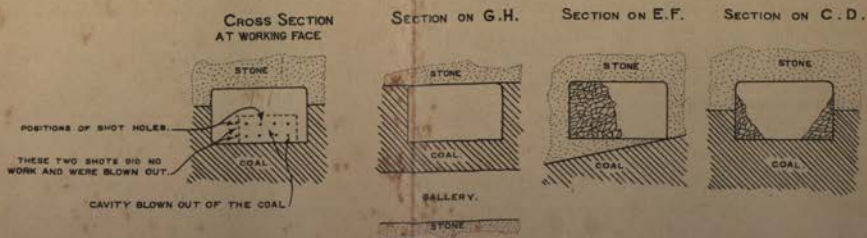
SECTIONAL ELEVATION



PLAN.

PLAN AND SECTIONS ILLUSTRATING REPORT ON AN ACCIDENT BY EXPLOSION OF COAL DUST AT THE TATA IRON AND STEEL Co.. LTD.'S SIJUA COLLIERY





LITHO BY CHAUVIN, SHAW & CO. CALCUTTA

RANIGANJ & JHARIA COAL FIELDS.

PLAN SHOWING THE EXACT LOCATION OF TRUE NORTH LINE PILLARS LAID DOWN BY THE SURVEY OF INDIA.

FOR PLANS SHOWING THE LOCATION OF SIMILAR LINES LAID DOWN AT DISHARGARH, NANDI, DHANBAD & JORAPOKHUR SEE ANNUAL REPORT, CHIEF INSPECTOR OF MINES FOR 1919.

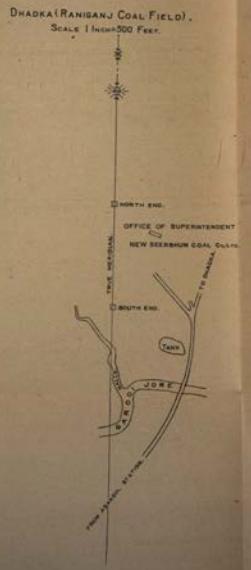


TABLE SHOWING MAGNETIC DECLINATIONS.

YEAR	JHARIA COAL FIELD	RANIGANJ COAL FIELD.
1900	EAST 1° – 45′	1° – 45′
1901	" 1° – 40′	1° – 40′
1902	" 1° – 40′	1° – 35′
1903	" 1° – 35′	1° – 30′
1904	" 1° – 30′	1° – 25′
1905	" 1° – 25′	1° – 25′
1906	" 1° – 20′	1° – 20′
1907	" 1° – 20′	1° – 15′
1908	" 1° – 15′	1° – 10′
1909	" 1° – 10′	1° – 5′
1910	" 1° – 5′	1° – 0′
1911	" 1° – 0′	0° – 55′
1912	" 0° – 55′	0° – 50′
1913	" 0° – 50′	0° – 45′
1914	" 0° – 45′	0° – 40′
1915	" 0° – 40′	0° – 35′
1916	" 0° – 35′	0° – 30′
1917	" 0° – 30′	0° – 25′
1918	" 0° – 25′	0° – 20′
1919	" 0° – 20′	0° – 15′
1920	" 0° – 15′	0° – 10′

NOTE:- WHEN CHECKING THEIR INSTRUMENTS AT ANY OF THESE STATIONS SURVEYORS SHOULD REMOVE FROM THEIR PERSONS ALL IRON AND STEEL SUCH AS KNIVES, KEYS, IRON SPECTACLES ETC.

LITHO BY THACKER, SPINK & CO. CALCUTTA.

APPENDIX I.

STATISTICS OF MINES AND MINERALS.

Table No. 1.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1921.

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
							A.—COAL.									
							Tons.									
Assam	Lakhimpur	5	4	1	7	20	269,198	1,732	199	...	1,931	638	201	78	917	2,848
	Naga Hills	1	...	1	2	4	42,824	224	...	1	225	268	14	3	285	510
	Sibsagar	...	...	...	1*	1	...	...	...	...	...		...	...	...	
	Total	6	4	2	10	25	312,022	1,956	199	1	2,156	906	215	81	1,202	3,358
Baluchistan	Sibi, Khost	8	1	7	...	...	31,253	563	...	...	563	388	3	17	408	971
	Quetta-Pishin	8	...	8	...	...	10,902	118	...	...	118	50	...	...	50	168
	Total	16	1	15	...	...	42,155	681	...	...	681	438	3	17	458	1,139
Bengal	Bankura, Raniganj	3	...	3	2	2	4,985	32	24	...	56	32	23	...	55	111
	Birbhum ,,	8	4	4	1	1	4,852	101	18	...	119	138	117	13	268	387
	Burdwan ,,	257	212	45	177	280	4,250,305	15,825	9,377	138	25,340	12,569	7,046	360	19,975	45,315
	Total	268	216	52	180	283	4,259,642	15,958	9,419	138	25,515	12,739	7,186	373	20,298	45,813

* *Not worked in 1921.*

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1921—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
							A.—COAL—*concld.* Tons.									
Bihar and Orissa	Hazaribagh: Bokaro-Ramgarh	3	3	...	2	6	929,143	3,802	3,477	23	7,302	1,815	2,180	40	4,035	11,337
	Hazaribagh: Giridih	12	4	8	9	17	804,135	4,776	1,590	34	6,400	1,993	960	68	3,021	9,421
	Hazaribagh: Jharia	11	5	6	3	4	180,334	468	387	45	900	486	384	74	944	1,844
	Manbhum: Jharia	371	189	182	246	486	9,878,815	27,725	21,063	526	49,334	24,142	13,830	1,882	39,854	89,188
	Manbhum: Raniganj	110	19	91	92	121	938,198	3,482	2,427	29	5,938	3,122	1,971	170	5,263	11,201
	Palamau, Daltonganj	1	1	...	1	2	36,590	74	69	24	167	82	39	...	121	288
	Sambalpur, Hingir-Rampur	3	1	2	...	...	77,277	279	178	...	457	175	43	...	218	675
	Sonthal Parganas: Jainty	3	3	...	2	2	105,652	385	258	...	643	438	167	...	605	1,248
	Sonthal Parganas: Raniganj	8	3	5	1	1	14,015	118	95	...	213	301	291	10	602	815
	Total	522	228	294	357	639	12,964,659	41,109	29,564	681	71,354	32,554	19,865	2,244	54,663	126,017
Burma	Southern Shan States	2	1	1	...	...	300	63	...	...	63	184	23	...	207	270
Central Provinces	Betul	2	...	2	...	...	210	20	28	...	48	16	15	2	33	81
	Chanda, Ballarpur	7	6	1	6	8	171,425	1,116	330	28	1,474	543	131	34	708	2,182
	Chhindwara, Pench Valley	38	8	30	21	39	449,311	2,922	1,988	316	5,226	1,199	1,057	319	2,575	7,801
	Narsinghpur, Mohpani	1	1	...	...	...	89,623	797	466	...	1,263	603	140	...	743	2,006
	Yeotmal	2	1	1	...	...	2,345	9	6	...	15	36	31	...	67	82
	Total	50	16	34	27	47	712,914	4,864	2,818	344	8,026	2,397	1,374	355	4,126	12,152

Panjab	Jhelum	16	...	16	7	10	50,639	1,011	...	7	1,018	584	...	11	595	1,613
	Mianwali	1	...	1	...	...	11,852	91	...	...	91	76	...	...	76	167
	Shahpur	3	...	3	1	1	4,751	53	...	...	53	65	...	...	65	118
	TOTAL	20	...	20	8	11	67,242	1,155	...	7	1,162	725	...	11	736	1,898
	GRAND TOTAL (COAL) FOR 1921	884	466	418	581	1,005	18,358,934	65,786	42,000	1,171	108,957	49,943	26,666	3,081	81,690	190,647
	" " OF PRECEDING YEAR	783	421	362	459	965	17,082,711	61,157	41,052	713	102,922	45,537	24,738	2,746	73,021	175,943
	DIFFERENCE	+101	+45	+56	+122	+40	+1,276,223	+4,629	+948	+458	+6,035	+4,406	+3,928	+335	+8,669	+14,704
	B.—MICA.						Cwt.									
Bihar and Orissa	Gaya	37	...	37	5	5	5,013	554	312	78	944	394	177	144	715	1,659
	Hazaribagh	409	40	369	67	68	17,987	3,775	2,010	703	6,488	1,872	1,305	1,026	4,203	10,691
	Manbhum	1	...	1	...	...	4	8	...	...	8	...	...	...	...	8
	Monghyr	7	...	7	...	...	291	85	46	2	133	35	30	34	149	282
	Sambalpur	1	...	1	...	...	4	40	45	5	90	...	...	...	...	90
	TOTAL	455	40	415	72	73	23,299	4,462	2,413	788	7,663	2,351	1,512	1,204	5,067	12,730
Central Provinces	Balaghat	1	...	1	...	...	...	3	2	...	5	...	...	...	...	5
Madras	Kistna	1	...	1	...	...	3	3	3	...	6	1	...	...	1	7
	Nellore	89	26	63	27	27	4,257	1,385	716	79	2,180	381	267	93	740	2,920
	Nilgiris	2	...	2	...	...	14	11	...	...	11	9	5	...	14	25
	Salem	1	...	1	...	...	20	2	...	...	2	33	11	2	46	48
	TOTAL	93	26	67	27	27	4,299	1,401	719	79	2,199	424	283	94	801	3,000

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1921—*contd.*

Provinces.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 15).	Total below ground.	Adult males.	Adult females.	Children (under 15).	Total above ground.	
							B.—MICA—*concld.* Cwt.									
Rajputana	Ajmer-Merwara	60	...	60	14	14	1,872	340	84	38	462	181	134	31	346	808
	GRAND TOTAL (MICA) FOR 1921.	609	66	543	113	114	29,470	6,206	3,218	905	10,329	2,956	1,929	1,329	6,214	16,543
	" " OF PRECEDING YEAR.	674	68	606	181	187	44,666	7,983	4,592	1,255	13,830	3,714	2,840	1,577	8,131	21,961
	DIFFERENCE	—65	—2	—63	—68	—73	—15,196	—1,777	—1,374	—350	—3,501	—758	—911	—248	—1,917	—5,418
							C.—MANGANESE ORE. Tons.									
Bombay	Panch Mahals	2	1	1	...	...	44,276	806	558	153	1,517	204	77	23	304	1,821
Central Provinces	Balaghat	28	1	27	21	22	201,264	2,068	2,596	148	4,812	620	690	145	1,455	6,367
	Bhandara	4	...	4	3	3	43,112	305	463	34	802	156	190	2	348	1,150
	Chhindwara	3	1	2	1	3	43,661	374	543	37	954	212	149	42	403	1,357
	Nagpur	21	1	20	16	18	180,851	1,901	2,269	33	4,203	672	556	66	1,294	5,497
	TOTAL	56	3	53	41	46	473,888	4,648	5,871	252	10,771	1,660	1,585	255	3,500	14,271

Madras	Vizagapatam	7	...	7	1	2	16,593	694	462	28	1,184	40	11	...	51	1,235
	GRAND TOTAL (MANGANESE) FOR 1921.	65	4	61	42	48	534,757	6,148	6,891	433	13,472	1,904	1,673	278	3,855	17,327
	" " OF PRECEDING YEAR.	58	7	51	42	45	582,636	4,645	5,144	439	10,228	1,612	1,162	262	3,036	13,264
	DIFFERENCE	+7	—3	+10	...	+3	—47,879	+1,503	+1,747	—6	+3,244	+292	+511	+16	+819	+4,063
							D.—LIMESTONE.									
							Tons.									
Burma	Northern Shan States	1	...	1	1	2	4,967	36	...	...	36	...	...	...	...	36
Central Provinces	Bilaspur	2	...	2	...	...	14,348	79	33	8	120	78	93	17	188	308
	Jabalpur, Katni	33	1	32	22	22	264,939	1,434	3,208	168	4,810	479	837	109	1,425	6,235
	TOTAL	35	1	34	22	22	279,287	1,513	3,241	176	4,930	557	930	126	1,613	6,543
Punjab	Hoshiarpur	1	...	1	...	...	...	20	...	...	20	10	...	...	10	30
	GRAND TOTAL (LIMESTONE) FOR 1921.	37	1	36	23	24	284,254	1,569	3,241	17	4,986	567	930	126	1,623	6,609
	TOTAL OF PRECEDING YEAR.	23	1	22	17	18	161,340	1,328	1,626	129	3,083	333	743	126	1,202	4,285
	DIFFERENCE	+14	...	+14	+6	+6	+122,914	+241	+1,615	+47	+1,903	+234	+187	...	+421	+2,324
							E.—SALT.									
							Tons.									
Punjab	Jhelum	2	1	1	1	1	95,751	471	265	29	765	62	...	...	62	827
	Mianwali	1	...	1	...	...	12,382	62	...	14	76	...	...	...	...	76
	Shahpur	1	...	1	...	...	14,951	33	24	5	62	...	...	...	...	62
	GRAND TOTAL (SALT) FOR 1921.	4	1	3	1	1	123,084	566	289	48	903	62	...	...	62	965
	" " OF PRECEDING YEAR.	4	1	3	1	2	161,092	499	333	69	901	67	1	...	68	969
	DIFFERENCE	...	...	...	...	—1	—38,008	+67	—44	+21	+2	—5	—1	...	—6	—4

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1921—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								
								Below ground.				Above ground.				Grand total below and above ground.
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 13).	Total below ground.	Adult males.	Adult females.	Children (under 13).	Total above ground.	
								F.—GEMS.								
								(*a*) Rubies.								
							Carats.									
Burma	Katha, Mogok	4	2	2	...	...	113,197	784	...	...	784	458	...	...	458	1,242
							(*b*) Sapphires.									
							48,916									
							(*c*) Spinels.									
							32,802									
	TOTAL	4	2	2	...	...	193,915	784	...	...	784	458	...	...	458	1,242
							(*d*) Beryl.									
Rajputana	Ajmer	2	...	2	...	...	6,300	11	...	...	11	...	...	...	...	11
	GRAND TOTAL (GEMS) FOR 1921	6	2	4	...	...	200,215	795	...	...	795	458	...	...	458	1,253
	" " OF PRECEDING YEAR	6	2	4	3	5	156,108	789	1	...	790	429	...	...	429	1,219
	DIFFERENCE	...	...	...	—3	—5	+44,107	+6	—1	...	+5	+29	...	...	+29	+34

G.—SLATE.

							Tons.								
Bihar and Orissa	Monghyr	7	...	7	5	5	2,829	148	112	64	324	149	...	...	149	473
Panjab	Gurgaon	6	...	6	4	4	42,630	114	...	78	192	23	...	6	29	221
	Kangra	5	...	5	...	...	4,878	93	2	2	97	23	20	14	57	154
	TOTAL	11	...	11	4	4	47,508	207	2	80	289	46	20	20	86	375
	GRAND TOTAL (SLATE) FOR 1921.	18	...	18	9	9	50,337	355	114	144	613	195	20	20	235	848
	" " OF PRECEDING YEAR.	18	...	18	5	5	10,345	370	186	74	630	181	30	20	231	861
	DIFFERENCE	...	...	...	+4	+4	+39,992	—15	—72	+70	—17	+14	—10	...	+4	—13

H.—GOLD.

							Ozs.								
Bihar and Orissa	Singhbhum	1	1	...	...	...	...	...	...	...	...	13	...	...	13	13
Madras	Anantapur	3	3	...	2	2	10,108	101	...	...	101	309	82	43	434	535
	GRAND TOTAL (GOLD) FOR 1921.	4	4	...	2	2	10,108	101	...	...	101	322	82	43	447	548
	" " OF PRECEDING YEAR.	4	4	...	1	2	13,645	104	15	...	119	250	43	22	315	434
	DIFFERENCE	...	...	...	+1	...	—3,537	—3	—15	...	—18	+72	+39	+21	+132	+114

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1921—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
							I.—IRON ORE.									
							Tons.									
Bihar and Orissa	Singhbhum	5	1	4	2	2	236,286	348	587	90	1,525	480	264	11	755	2,280
Burma	Mandalay	1	...	1	...	...	11,916	159	...	...	159	23	1	...	24	183
	Northern Shan States	2	...	2	2	2	37,915	237	28	...	265	311	11	...	322	587
	TOTAL	3	...	3	2	2	49,831	396	28	...	424	334	12	...	346	770
Rajputana	Ajmer-Merwara	1	1	...	...	...	73	5	...	...	5	25	...	...	25	30
	GRAND TOTAL (IRON) FOR 1921.	9	2	7	4	4	286,190	1,249	615	90	1,954	839	276	11	1,126	3,080
	" " OF PRECEDING YEAR.	11	2	9	3	4	148,472	714	307	63	1,084	1,138	327	41	1,506	2,590
	DIFFERENCE	—2	...	—2	+1	...	+137,718	+535	+308	+27	+870	—299	—51	—30	—380	+490

J.—WOLFRAM ORE.

							Tons.								
Burma	Mergui	1	...	1	...	...	½	33	8	...	41	4	5	...	9	50
	Tavoy	14	2	12	11	11	884	1,649	14	4	1,667	325	2	...	327	1,994
	TOTAL	15	2	13	11	11	884½	1,682	22	4	1,708	329	7	...	336	2,044
	GRAND TOTAL (WOLFRAM) FOR 1921.	15	2	13	11	11	884½	1,682	22	4	1,708	329	7	...	336	2,044
	" " OF PRECEDING YEAR.	52	4	48	...	...	1,733½	2,870	135	19	3,024	1,400	76	44	1,520	4,544
	DIFFERENCE	—37	—2	—35	+11	+11	—849	—1,188	—113	—15	—1,316	—1,071	—69	—44	—1,184	—2,500

K.—MAGNESITE.

							Tons.								
Madras	Salem	2	...	2	...	...	17,152	238	230	330	798	109	...	32	141	939
	TOTAL OF PRECEDING YEAR	2	...	2	1	1	11,300	204	146	248	598	105	...	29	134	732
	DIFFERENCE	...	...	...	—1	—1	+5,852	+34	+84	+82	+200	+4	...	+3	+7	+207

L.—CHROMITE ORE.

							Tons.								
Baluchistan	Zhob	22	...	22	...	...	25,122	343	...	...	343	110	...	...	110	453
Bihar and Orissa	Singhbhum	2	...	2	...	...	2,605	84	102	17	203	41	44	17	102	305
	GRAND TOTAL (CHROMITE) FOR 1921.	24	...	24	...	...	27,727	427	102	17	546	151	44	17	212	758
	TOTAL OF PRECEDING YEAR.	24	...	24	...	...	23,123	376	188	2	566	274	347	18	639	1,205
	DIFFERENCE	...	...	...	...	...	+4,604	+51	—86	+15	—20	—123	—303	—1	—427	—447

APPENDIX I—*contd.*

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1921—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								
								Below ground.				Above ground.				Grand total below and above ground.
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
							M.—COPPER ORE.									
							Tons.									
Bihar and Orissa	Singhbhum	3	2	1	2	2	32,560	711	...	...	711	1,382	672	72	2,126	2,837
Central Provinces	Balaghat	1	...	1	...	...	...	23	4	...	27	12	5	2	19	46
	GRAND TOTAL (COPPER ORE) FOR 1921.	4	2	2	2	2	32,560	734	4	...	738	1,394	677	74	2,145	2,883
	TOTAL OF PRECEDING YEAR.	3	1	2	1	3	28,167	506	6	...	512	955	637	52	1,644	2,156
	DIFFERENCE	+1	+1	...	+1	—1	+4,393	+228	—2	...	+226	+439	+40	+22	+501	+727
							N.—BAUXITE.									
							Cwt.									
Bombay	Kaira	1	1	...	1*	1	93,060	186	55	17	208	9	4	...	13	221
	TOTAL OF PRECEDING YEAR	1	1	...	...	...	78,630	45	35	11	91	6	...	...	6	97
	DIFFERENCE	...	...	...	+1	+1	+14,430	+91	+20	+6	+117	+3	+4	...	+7	+124
							O.—CALCITE.									
							Tons.									
Bihar and Orissa	Bhagalpur	1	...	1	...	...	3	2	2	...	4	2	2	...	4	8

* In Jabalpur District, Central Provinces—mine closed.

P.—CLAY.

							Tons.									
Bihar and Orissa	Bhagalpur	2	...	2	...	...	1,863	50	50	1	101	116	73	96	285	386
	Manbhum	1	...	1	...	...	20,109	88	33	...	121	...	...	...	...	121
	Palamau	1	...	1	...	...	3,678	12	18	6	36	18	10	6	34	70
	TOTAL	4	...	4	...	...	25,650	150	101	7	258	134	83	102	319	577
Central Provinces	Jabalpur	5	2	3	3	3	49,024	347	421	49	817	40	...	....	40	857
Delhi	Delhi	5	...	5	...	...	12,801	49	...	...	49	34	1	...	35	84
	GRAND TOTAL (CLAY) FOR 1921.	14	2	12	3	3	87,475	546	522	56	1,124	208	84	102	394	1,518
	TOTAL OF PRECEDING YEAR.	12	2	10	2	6	90,538	520	545	52	1,117	204	123	26	353	1,470
	DIFFERENCE	+2	...	+2	+1	−3	−3,063	+26	−23	+4	+7	+4	−39	+76	+41	+48

Q.—LEAD ORE.

							Tons.									
Burma	Northern Shan States	1	1	...	1	4	*144,089	992	...	...	992	428	...	...	428	1,420
Central Provinces	Drug	1	...	1	...	...	½	5	12	...	17	5	12	...	17	34
	GRAND TOTAL (LEAD ORE) FOR 1921.	2	1	1	1	4	144,089½	997	12	...	1,009	433	12	...	445	1,454
	TOTAL OF PRECEDING YEAR	2	1	1	1	5	128,908$\frac{9}{10}$	617	12	...	629	343	12	...	355	984
	DIFFERENCE	...	...	...	...	−1	+15,181$\frac{2}{10}$	+380	...	...	+380	+90	...	...	+90	+470

R.—TIN ORE.

							Tons.									
Bihar and Orissa	Hazaribagah	1	1	...	...	...	...	4	...	...	4	5	4	5	14	18
Burma	Mergui	11	1	10	2	2	130	446	...	...	446	218	7	...	225	671
	Tavoy	18	1	17	...	...	901	393	...	...	393	488	34	...	522	915
	Thaton	1	...	1	...	...	1	3	6	...	9	...	...	...	...	9
	TOTAL	30	2	28	2	2	1,032	842	6	...	848	706	41	...	747	1,595
	GRAND TOTAL (TIN ORE) FOR 1921.	31	3	28	2	2	1,032	846	6	...	852	711	45	5	761	1,613
	TOTAL OF PRECEDING YEAR.	25	2	23	1	1	1,055½	639	59	8	706	373	36	13	422	1,128
	DIFFERENCE	+ 6	+1	+5	+1	+1	−23½	+207	−53	−8	+146	+338	+9	−8	+339	+485

* Amount of refined lead extracted=33,717 Tons.

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1921—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 15).	Total below ground.	Adult males.	Adult females.	Children (under 15).	Total above ground.	Grand total below and above ground.
							S.—STEATITE.									
							Cwt.									
Bihar and Orissa	Bhagalpur	1	...	1	...	...	1,800	5	3	...	8	3	3	...	6	14
Central Provinces	Jabalpur	3	...	3	3	3	21,597	71	51	...	122	19	55	21	95	217
Madras	Nellore	2	...	2	...	...	33	4	...	...	4	9	2	...	11	15
	GRAND TOTAL (STEATITE) FOR 1921.	6	...	6	3	3	23,430	80	54	...	134	31	60	21	112	246
	" " OF PRECEDING YEAR.	4	...	4	3	3	45,910	74	51	...	125	26	49	17	92	217
	DIFFERENCE	+2	...	+2	...	...	—22,480	+6	+3	...	+9	+5	+11	+4	+20	+29
							T.—FULLERS' EARTH.									
							Tons.									
Central Provinces	Jabalpur	...	...	...	...	...	113*	*Labour figures included with those for limestone*								
	TOTAL OF PRECEDING YEAR	...	...	...	...	...	197									
	DIFFERENCE	...	...	...	...	...	—84									

*Won from a limestone mine.

U.—SILVER.

							Ozs.									
Burma	Northern Shan States	...	...	...	...	...	3,555,021*	*Labour figures included with those for lead ore.*								
Madras	Anantapur	...	...	...	...	...	619†	*Labour figures included with those for gold.*								
	GRAND TOTAL (SILVER) FOR 1921.	...	...	...	...	...	3,555,640	...	...	...	...	...	...	...	...	...
	TOTAL OF PRECEDING YEAR	...	...	...	...	...	2,870,595	...	...	...	...	...	...	...	...	...
	DIFFERENCE	...	...	...	...	...	+85,045	...	...	...	...	...	...	...	...	...

V.—APATITE.

							Tons.									
Bihar and Orissa	Singhbhum	1	...	1	...	...	347	4	7	...	11	8	21	...	29	40

W.—GRAPHITE.

							Cwt.									
Bihar and Orissa	Bhagalpur	1	...	1	...	...	20	11	15	4	30	3	5	2	10	40
Central Provinces	Betul	1	...	1	...	...	483	3	4	...	7	1	1	2	4	11
	GRAND TOTAL (GRAPHITE) FOR 1921.	2	...	2	...	...	503	14	19	4	37	4	6	4	14	51
	TOTAL OF PRECEDING YEAR	7	...	7	...	...	702	37	24	...	61	10	7	...	17	78
	DIFFERENCE	—5	...	—5	...	...	—199	—23	—5	+4	—24	—6	—1	+4	—3	—27

X.—OCHRE.

							Tons.									
Bihar and Orissa	Puri	1	1	...	...	...	450	8	...	...	8	25	...	...	25	33
	TOTAL OF PRECEDING YEAR	1	1	...	...	...	400	8	...	...	8	29	...	...	29	37
	DIFFERENCE	...	...	...	...	...	+50	...	...	...	...	—4	...	...	—4	—4

* Extracted from 144,089 tons of lead ore.
† Won from the Anantapur gold mine.

STATISTICS OF MINES AND MINERALS—*concld.*

Table No. 1—*concld.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1921—*concld.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of Mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.								Grand total below and above ground.
								Below ground.				Above ground.				
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children (under 13).	Total below ground.	Adult males.	Adult females.	Children (under 13).	Total above ground.	
								Y.—MOLYBDENITE.								
							Cwt.									
Burma	Tavoy	1	...	1	...	...	2	5	...	...	5	3	...	...	3	8
	Total of preceding year	1	...	1	...	...	1	...	*Labour figures included with those for wolfram*						...	...
	Difference	...	...	...	...	...	+1	+5	...	...	+5	+3	...	...	+3	+8
								Z.—BARYTES.								
							Cwt.									
Madras	Karnool	1	...	1	...	...	9,400	7	...	...	7	2	8	10	20	27
	Total of preceding year	1	...	1	...	...	4,260	5	...	...	5	4	7	9	20	25
	Difference	...	...	...	...	...	+5,140	+2	...	...	+2	−2	+1	+1	...	+2

GRAND TOTAL (ALL MINERALS) 1921.	1,741	558	1,183	798	1,233	Tons. 19,949,388¾ Cwt. 155,865 Carats. 200,215 Troy ounces. 3,565,748	88,501	57,403	3,395	149,299	60,665	34,546	5,159	100,364	249,66
GRAND TOTAL OF PRECEDING YEAR.	1,716	518	1,198	702	1,228	Tons. 18,452,068 1/10 Cwt. 174,172¾ Carats. 156,108 Troy ounces. 2,884,240	83,490	54,457	3,082	141,029	56,990	31,178	5,002	93,170	234,199
DIFFERENCE . . .	+25	+40	—15	+96	+5	Tons. +1,497,320 1/10 Cwt. —18,307¾ Carats. +44,107 Troy ounces. +679,508	+5,011	+2,946	+313	+8,270	+3,675	+3,368	+151	+7,194	+15,464

Table No. 2.

Analyses of figures relating to output of coal.

Province	District and mineral field.	Opening stocks.		Raisings.		Total.		Despatches.		Colliery Consumption.		Coal delivered to coking.		Closing stocks.		Coke made.	
		Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Steam.	Slack.	Hard coke.	Soft coke.
		Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Assam	Lakhimpur	3,424	...	269,198	...	272,622	...	257,495	...	13,463	...	768	...	516	...	256	...
	Naga Hills	478	...	42,824	...	43,302	...	42,832	...	374	...	...	...	96	...	...	...
	Sibsagar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total	3,902	...	312,022	...	315,924	...	300,327	...	14,217	...	768	...	612	...	256	...
Baluchistan	Quetta-Pishin	311	937	...	10,902	311	11,839	...	10,474	...	200	...	...	311	1,165	...	...
	Sibi-Khost	276	1,036	3,945	27,308	4,221	28,344	3,890	20,772	12	5,674	...	...	319	1,898	...	...
	Total	587	1,973	3,945	38,210	4,532	40,183	3,890	31,246	12	5,874	...	...	630	3,063	...	...
Bengal	Bankura-Raniganj	11	2,020	4,088	897	4,099	2,917	2,972	200	819	1,304	220	...	88	1,413	...	147
	Birbhum „	213	18	3,621	731	3,834	749	1,548	114	2,037	600	...	...	249	35	...	...
	Burdwan „	159,187	34,834	3,654,752	595,553	3,813,939	630,387	3,315,277	203,833	324,618	392,409	10,346	4,064	163,698	30,081	1,355	6,820
	Total	159,411	36,872	3,662,461	597,181	3,821,872	634,053	3,319,797	204,147	327,474	394,313	10,566	4,064	164,035	31,529	1,355	6,967

Bihar and Orissa	Hazaribagh	Bokaro-Ramgarh	1,312	762	818,401	110,742	819,713	111,504	814,934	93,887	3,750	9,838	...	7,709	1,029	70	219	4,814
		Giridih	9,774	6,284	597,746	206,389	607,520	212,673	583,281	96,589	8,181	53,758	...	53,681	16,058	8,645	39,961	...
		Jharia	26,042	7,936	152,326	28,508	178,368	36,444	136,532	23,776	15,710	4,144	779	1,478	25,347	7,046	1,119	...
	Manbhum	Jharia	1,613,159	281,334	8,327,497	1,551,818	9,940,656	1,832,652	7,778,186	836,572	672,682	619,748	164,083	94,168	1,326,705	282,164	78,226	71,730
		Raniganj	203,094	28,976	772,566	165,632	975,660	194,608	566,983	84,640	130,761	79,420	97,494	5,783	180,422	24,765	...	67,770
	Palamau-Daltonganj		731	...	32,691	3,899	33,422	3,899	27,555	3,899	5,087	...	...	...	830	...	...	...
	Sambalpur-Hingir Rampur		...	...	61,822	15,455	61,822	15,455	61,704	...	118	15,455	...	...	...	...	...	...
	Santhal Parganas.	Jainty	2,692	3,355	96,676	8,976	99,368	12,331	97,139	3,700	...	8,416	...	...	2,229	215	...	...
		Raniganj	418	1,099	11,576	2,439	11,994	3,538	5,230	857	3,006	685	....	...	3,758	1,996	...	...
		TOTAL	1,857,222	329,746	10,871,301	2,093,358	12,728,523	2,423,104	10,071,544	1,143,920	839,245	791,464	262,356	162,819	1,555,378	324,901	119,525	144,314
Central Provinces	Betul		...	...	190	20	190	20	...	...	40	20	...	...	150	...	...	...
	Chanda		1,055	643	132,212	39,213	133,267	39,856	127,622	19,215	4,486	18,041	...	...	1,209	2,600	...	...
	Chhindwara		2,433	1,102	370,194	79,117	372,627	80,219	362 401	49,218	4,348	27,102	...	...	5,878	3,899	...	...
	Narsinghpur		242	1,529	68,856	20,967	68,998	22,496	64,093	17,476	4,765	1,309	...	...	40	3,711	...	...
	Yeotmal		98	26	2,044	301	2,142	327	1,518	286	69	...	...	...	555	41	....	...
		TOTAL	3,828	3,300	573,296	139,618	577,124	142,918	555,634	86,195	13,658	46,472	...	...	7,832	10,251	...	...
Burma	Southern Shan States		...	...	40	260	40	260	40	30	...	6	...	...	...	234	...	...
Panjab	Jhelum		...	4,515	2,218	48,421	2,218	52,936	1,118	46,602	1,100	2,415	...	...	...	3,919	...	...
	Mianwali		76	1,074	1,555	10,297	1,631	11,371	1,340	10,473	...	...	...	...	291	898	...	...
	Shahpur		...	1,024	371	4,380	371	5,404	371	4,125	...	117	...	...	...	1,162	...	...
		TOTAL	76	6,613	4,144	63,098	4,220	69,711	2,829	61,200	1,100	2,532	...	...	291	5,979	...	...
	GRAND TOTAL 1921		2,025,026	378,504	15,427,209	2,931,725	17,453,235	3,310,229	14,254,061	1,526,738	1,195,706	1,240,661	273,690	166,888	1,728,778	375,947	121,136	151,417

APPENDIX I—*contd.*

Table No. 3.

Number of mines opened and closed during the year ending 31st December 1921.

Province.	District.	Number of mines opened.	Number of mines closed.
	A.—COAL.		
Baluchistan	Sibi-Khost	2	...
	Quetta-Pishin	1	1
	TOTAL	3	1
Bengal	Birbhum	4	1
	Burdwan-Raniganj	23	5
	TOTAL	27	6
Bihar and Orissa	Hazaribagh—Giridih	3	...
	Hazaribagh—Jharia	1	...
	Manbhum—Jharia	43	4
	Manbhum—Raniganj	16	1
	Santhal Parganas, Raniganj	1	...
	TOTAL	64	5
Burma	Southern Shan States	2	1
Central Provinces	Betul	1	...
	Chanda	...	1
	Chhindwara	18	8
	TOTAL	19	9
Panjab	Jhelum	1	3
	Shahpur	1	...
	TOTAL (COAL)	117	25

APPENDIX I—*contd.*

Table No. 3—*contd.*

Number of mines opened and closed during the year ending 31st December 1921—*contd.*

Province.	District.	Number of mines opened.	Number of mines closed.
	B.—MICA.		
Bihar and Orissa	Gaya	13	13
	Hazaribagh	102	194
	Manbhum	...	1
	Monghyr	1	6
	Total	116	214
Central Provinces	Balaghat	...	1
Madras	Kistna	...	1
	Nellore	18	29
	Salem	...	1
	Nilgiris	2	...
	Total	20	31
Rajputana	Ajmer-Merwara	17	27
	Total (Mica)	153	273
	C.—MANGANESE ORE.		
Central Provinces	Balaghat	4	4
	Chhindwara	...	2
	Nagpur	...	2
	Total	4	8
Madras	Vizagapatam	...	4
	Total (Manganese)	4	12

APPENDIX I—*contd.*

Table No. 3—*contd.*

Number of mines opened and closed during the year ending 31st December 1921—*contd.*

Province.	District.	Number of mines opened.	Number of mines closed.
	D.—SLATE.		
Bihar and Orissa	Monghyr	...	3
	E.—LIMESTONE.		
Central Provinces	Jabalpur	4	5
	F.—IRON ORE.		
Burma	Mandalay	...	1
	Northern Shan States	1	1
	Total (Iron)	1	2
	G.—SALT.		
Panjab	Jhelum	...	1
	H.—APATITE.		
Bihar and Orissa	Singhbhum	1	...
	I.—GEMS (Rubbies).		
Burma	Katha	...	2
	J.—COPPER ORE.		
Bihar and Orissa	Singhbhum	1	...
	K.—CLAY.		
Bihar and Orissa	Bhagalpur	...	1
Delhi	Delhi	3	2
	Total (Clay)	3	3

APPENDIX I—*contd.*

Table No. 3—*concld.*

Number of mines opened and closed during the year ending 31st December 1921—*concld.*

Province.	District.	Number of mines opened.	Number of mines closed.
	L.—LEAD ORE.		
Central Provinces	Drug	1	1
	M.—TIN ORE.		
Bihar and Orissa	Hazaribagh	...	1
Burma	Mergui	4	3
	Tavoy	4	1
	Total (Tin)	8	5
	N.—STEATITE.		
Bihar and Orissa	Bhagalpur	1	1
	O.—BAUXITE.		
Bombay	Kaira	...	1
	P.—CALCITE.		
Bihar and Orissa	Bhagalpur	1	1
	Q.—GRAPHITE.		
Bihar and Orissa	Bhagalpur	...	1
	GRAND TOTAL (all mines)	295	336

APPENDIX I—*concld.*

Table No. 4.

The following table shows the fluctuations in the output of the principal minerals raised from mines classed under the Indian Mines Act, 1901. The other minerals raised are gems, slate, magnesite, steatite, clay, bauxite, fuller's earth, graphite, molybdenite, ochre, barytes, apatite and calcite.

Year.	Coal.	Manganese ore.	Mica.	Limestone	Salt.	Gold.	Copper ore.	Wolfram.	Iron ore.	Chromite ore.	Tin ore.	Lead ore.	Silver.
	Tons.	Tons.	Cwt.	Tons.	Tons.	Troy ozs.	Tons.	Tons.	Tons.	Tons.	Tons	Tons.	Ozs.
1912 .	14,044,368	423,464	41,660	91,764	131,233	7,269	9,984	1,270	79,382	6	63	9	...
1913 .	15,486,318	437,891	43,650	71,259	138,540	11,019	3,639	1,378	98,371	3,414	87	1¼	...
1914 .	15,727,631	555,672	38,189	146,505	135,518	19,873	4,400	1,576	167,600	3,006	45	2½	...
1915 .	16,352,480	578,172	24,063	64,179	144,770	24,320	6,010	1,972	126,617	1,465	14	7	612
1916 .	16,419,062	568,062	35,078	45,200	160,357	23,235	2,671	2,955	142,606	5,004	88	7	1,362
1917 .	17,326,384	497,052	35,896	93,340	153,563	22,991	20,108	3,966	178,803	17,266	182	...	1,381
1918 .	19,347,039	415,367	51,573	121,451	158,513	19,916	3,619	3,609	115,890	24,030	602	3	1,169
1919 .	21,759,727	420,184	41,983	146,610	174,974	11,191	33,756	2,905	101,322	14,067	701	2½	753
1920 .	17,062,711	563,636	44,666½	161,340	181,093	13,645	28,167	1,733½	146,472	23,123	1,056	128,908	2,670,695
1921 .	18,358,934	284,254	29,470	284,252	123,094	10,108	32,560	894½	296,190	27,727	1,032	144,060½	3,555,640

Table No. 5.

The following table shows the amount of coal raised, the average number of persons working daily and the death-rates during the years 1912 to 1921 in respect of coal mines under the Indian Mines Act, 1901 :—

Year.	Amount of coal raised.	Average number of persons working daily below and above ground.	Number of deaths below and above ground.	Death-rates	
				Per 1,000,000 tons raised.	Per 1,000 persons working daily below and above ground.
1912 . . .	14,044,368	121,392	157	11·17	1·29
1913 . . .	15,486,318	133,042	185	11·95	1·39
1914 . . .	15,727,631	137,851	145	9·22	1·05
1915 . . .	16,352,480	145,537	166	10·15	1·14
1916 . . .	16,419,062	143,459	169	10·29	1·18
1917 . . .	17,326,384	153,683	163	9·41	1·06
1918 . . .	19,347,039	176,269	197	9·93	1·12
1919 . . .	21,759,727	190,052	260	11·95	1·37
1920 . . .	17,062,711	175,943	172	10·07	0·98
1921 . . .	18,358,934	190,647	257	13·99	1·35

APPENDIX II.

ACCIDENTS IN MINES.

Table No. I.

List of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1921.

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			EXPLOSIONS OF FIRE-DAMP—(*15 deaths*).			
1	28th January, 11 A.M.	Khost mine, Khost P. O., Baluchistan.	North Western Railway	(1) Nabi, (*m.*), 28, (2) Muhammad, (*m.*), 44, *Stone-cutters.*	Coal	One of the two deceased opened a locked safety-lamp in the face of a dip gallery, and caused the ignition of a small accumulation of fire-damp. Both men were severely burnt. Nabi was killed and Muhammad died after two days. Another man was slightly burnt and recovered.
2	28th February, 2-30 P.M.	Amlabad mine, Jamadoba P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	(1) Ahadali Meah, (*m.*), 33, (2) Heman Meah, (*m.*), 40, (3) Jumon Meah, (*m.*), 32, (4) Sukor Meah, (*m.*), 27, (5) Deva Tamli, (*m.*), 22, (6) Bishun Sing, (*m.*), 28, (7) Madari Meah, (*m.*), 26, (8) Chitamon Gope, (*m.*), 24, (9) Jaggannath Rajwar, (*m.*), 40, (10) Pairag Rajwar, (*m.*), 42, (11) Bebari Rajwar, (*m.*), 36, *Stone-cutters.*	Coal	Whilst the deceased were at work at the bottom of a sinking shaft, 152 feet deep, an explosion of fire-damp occurred. They were so severely burnt that they all died within two days. Inspection and inquiry made. (*See Report, page 8.*)
3	23rd March, 1 P.M.	Victoria mine, Kulti P. O., Bengal.	New Beerbhum Coal Co., Ld.	Roni Korah, (*m.*), 26, *Coal-cutter.*	Coal	Deceased, carrying an open lamp, entered a gallery and ignited an accumulation of fire-damp. He was severely burnt and died eight days later. Inspection and inquiry made. (*See Report, page 9.*)

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			EXPLOSIONS OF FIRE-DAMP—*concld.*			
4	26th September, 10 A.M.	Satpukuria Kristoganj mine, Kalipahari P. O., Bengal.	Jagmohan Ramjibon Marwari.	Seik Rekab Ali, (*m.*), 30, *Coal-cutter.*	Coal	Deceased and two other persons entered an unventilated gallery, and ignited a small accumulation of fire-damp with an open light. Deceased sustained serious burns about the body to which he succumbed seven days later. The other two persons were slightly burnt. Inspection and inquiry made.
			FALLS OF ROOF AND SIDES.			
			(*a*) Falls of roof—(*81 deaths*).			
5	8th January, 4 A.M.	Katras mine, Katrasgarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Chotan Meah, (*m.*), 35, *Coal-cutter.*	Coal	Deceased, with three other miners, went to work in a mine before the sirdar had made his examination. He commenced cutting coal in a gallery and was killed instantly by a mass of roof stone, 12′ × 10′ × 8″, which fell from a height of 6 feet. Inspection and inquiry made. (*See Report, page 9.*)
6	26th January, 8-30 P.M.	Ekra Khas, Bansjora P. O., Bihar and Orissa.	Maharaja of Cossimbazar.	Budhon Bhuiya, (*m.*), 22, *Coal-cutter.*	Coal	Deceased was standing on the top of a barrel, and cutting side coal when a mass of roof coal, 7′×5′×2′, fell from a height of 11 feet from two "slips" in the roof. He was killed instantly. Inspection and inquiry made.
7	26th January, 3-45 P.M.	Ledo Valley (Old West mine), Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Rahamat Makrani, (*m.*), 28, *Labourer.*	Coal	Deceased was loading coal in an underground chamber when a mass of stone weighing about 10 cwts., fell on him from a height of 25 feet inflicting injuries from which he died 2 hours later. Inspection and inquiry made.
8	27th January, 9 A.M.	Hermyingyi mine, Tavoy P. O., Burma.	The Burma Finance and Mining Co., Ld.	Lam Hoo, (*m.*), 28, *Tribute miner.*	Wolfram	Whilst deceased was engaged in barring down rock in the face of a drive a fall of roof and side took place. He sustained fatal injuries. Inspection and inquiry made.
9	12th February, 5-30 A.M.	Kustore South mine, Kusunda P. O., Bihar and Orissa.	Raneegunge Coal Association, Ld.	(1) Mahabir Meah, (*m.*), 45, (2) Bhunsi Meah, (*m.*), 50, (3) Lukan Manjhi, (*m.*), 25, *Coal-cutters.*	Coal	Whilst deceased with a number of other miners was engaged in extracting a pillar, the roof collapsed, over an area of 47′×60′ to a height of 30 feet. The pillar was crushed and the deceased entombed. Their bodies could not be recovered. Inspection and inquiry made. (*See Report, page 10.*)
10	17th February, 12-30 P.M.	Ledo Valley mine, Margherita P. O., Assam.	Assam Railways & Trading Co., Ld.	(1) Deonarayan, (*m.*), 25, *Labourer*; (2) Surup Sing Rai, (*m.*), 25, *"Opening-man."*	Coal	Whilst persons were loading coal in an "opening" or chamber a mass of some 15 tons of coal fell without warning from a fault plane 12 feet above. Deonarayan was killed instantly. Surup Singh Rai sustained injuries to which he succumbed seven weeks later. Another man was severely injured. Inspection and inquiry made.

11	25th February, 1 A.M.	Kalonta mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Hon Kyan, (*m.*), 27, *Miner.*	Wolfram	Deceased with other coolies had, contrary to orders, gone to work at night in an adit which was being re-timbered. He was buried by a fall of earth and suffocated. Inspection and inquiry made.
12	1st March, 2 P.M.	Namdang mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Hanuman Sing, (*m.*), 30, *Labourer.*	Coal	Deceased was assisting in drilling shot holes in an underground chamber when a mass of coal fell upon him from the roof at a height of 10 feet. He was killed instantly. Inspection and inquiry made.
13	5th March, 1-30 P.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Kalla Kora, (*f.*), 17, *Coal-carrier.*	Coal	Deceased went through a fence and, whilst loading loose coal on the edge of a goaf, was killed instantly by a mass of roof stone, 12′ × 15′ × 1′9″, which fell from a height of 7½ feet. Inspection and inquiry made.
14	11th March, 1 P.M.	Malkera mine, Katrasgarh P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	(1) Bhukan Bania, (*m.*), 26, *Stone-cutter*; (2) Tikon Panday, (*m.*), 28, *Miners' Sirdar.*	Coal	While the roof was being dressed at the junction of two roads a fall of stone, measuring 15′ × 15′ × 2′ thick, occurred. The deceased were killed on the spot and four other persons received slight injuries. Inspection and inquiry made.
15	11th March, 1-30 P.M.	North Bararee mine, Jharia P. O., Bihar and Orissa.	North Bararee Coal Co.	Bonu Mullick, (*m.*), 32, *Coal-cutter.*	Coal	Deceased was killed by a fall of roof, weighing about 1½ tons, which fell without warning from a concealed "slip" in the roof. Inspection and inquiry made.
16	15th March, 10-30 A.M.	Nilaripathra mine, Jharia P. O., Bihar and Orissa.	N. M. Choudhury & Co.	Dhani Dosad, (*m.*), 38, *Coal-cutter.*	Coal	Deceased left the part of the mine in which he had been told to work and passing through a fence went to another part, without orders, and with the intention of robbing coal from the side. A block of roof coal, 11 feet × 5⅓ feet × 5½ feet, fell upon him from a height of 9 feet, killing him instantly. Inspection and inquiry made.
17	20th March, 4 P.M.	Jhakorkot mine, Dhak P. O., Panjab.	Northern India Coal Co.	Zaman, (*m.*), 45, *Coal-cutter.*	Coal	Deceased, whilst working in a "long wall" face, was killed by a mass of roof stone, 2′×1′ 6″×9″, which fell between two chocks in his working place. Inspection and inquiry made.
18	23rd March, 5 P.M.	Singrah mine, Mohuda P. O., Bihar and Orissa.	Singrah Coal Co., Ld.	Khudu Mohato, (*m.*), 40, *Coal-cutter.*	Coal	Deceased with a female carrier went through a fence and commenced to rob a pillar when a mass of stone and coal, measuring 6′ 6″×7′×2′, thick, fell from a height of 7 feet. He was killed instantly and the woman received severe injuries. Inspection and inquiry made.
19	25th March, 9 A.M.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Quan Fatt, (*m.*), 40, *Tribute Miner.*	Wolfram	Whilst engaged in barring down rock from the face of a working deceased was struck by falling rock. He sustained a compound comminuted fracture and died eleven days later.
20	31st March, 1-30 P.M.	Ena mine, Jharia P. O., Bihar and Orissa.	North-West Coal Co., Ld.	Mondu Chamar, (*m.*), 30, *Coal-cutter.*	Coal	While deceased was employed in extracting a pillar he was killed by a mass of roof coal, measuring 10′×10′×3′ 6″, which fell from a height of 8 feet. Inspection and inquiry made.
21	2nd April, 1-30 P.M.	Bastacolla mine, Jharia P. O., Bihar and Orissa.	New Beerbhum Coal Co., Ld.	Sreecharan Chamar, (*m.*), 38, *Coal-cutter.*	Coal	Deceased was standing on a ladder boring a shot hole when a mass of roof coal, measuring 24′×8′×4′, against which the ladder was placed, fell, taking the ladder and deceased with it. He was killed instantly. Inspection and inquiry made.
22	28th April, 3 A.M.	Nandi mine, Jamuria P. O., Bengal.	Adjai Coal Co., Ld.	Mongal Kahar, (*m.*), 42, *Timber mistry.*	Coal	Whilst deceased was assisting to withdraw a prop from a goaf area an extensive fall of roof occurred. He was buried by the fall, and his body could not be recovered. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*a*) Falls of roof—*contd.*			
23	1st May, 12-10 P.M.	Jotejanaki mine, Topesi P. O., Bengal.	P. K. Chatterji & Bros.	Pani Mejhian, (*f.*), 35, *Coal-carrier.*	Coal	Deceased and another woman went through a fence into a disused gallery, and whilst they were loading coal there a piece of shale, weighing about half a ton, fell upon them from a height of 13 feet. Deceased was killed instantly and her companion injured slightly. Inspection and inquiry made.
24	3rd May, 11 P.M.	Loi-An central mine, Kalaw P. O., Southern Shan States, Burma.	Coalfields of Burma, Ld.	Hema Lal, (*m.*), 30, *Coal-cutter.*	Coal	Whilst at work in the bottom of a sinking shaft. 26 feet deep, deceased was killed by a fall of stone from the roof. The shaft was timbered, but the stone fell from a "slip" at a joint below the timbering.
25	12th May, 8 A.M.	Ballarpur mine, Ballarpur P. O., Central Provinces.	Sir K. C. Daga and others.	Kuthur Balla, (*m.*), 38, *Trammer.*	Coal	A mass of coal, 3′×1′ 6″×1′, fell without warning from the roof at a height of 11 feet at a point where two tram roads, 12 feet wide, met. Deceased, who was tramming a tub along the road at the time, was struck down and killed instantly. Inspection and inquiry made.
26	17th May, 12-30 A.M.	Chanch mine, Chirkunda P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Bipan Lohar, (*m.*), 40, *Coal-cutter.*	Coal	Deceased left his appointed working place, and began to cut coal from the side of a pillar. A mass of coal, measuring 9′×4′ 6″×1′ 6″, fell upon him from the side, causing injuries from which he died instantly. Inspection and inquiry made.
27	18th May, 4 A.M.	Mohpani mine, Mohpani P. O., Central Provinces.	Great Indian Peninsula Railway Co.	Phola *alias* Birbal Gond, (*m.*), 14, *Coal-carrier.*	Coal	Deceased went to sleep in a refuge hole on an underground road, and was killed by a mass of coal, 3′ 3″×2′ 3″×1′ 6″, which fell from a concealed "slip" at a height of 7 feet.
28	1st June, 7 P.M.	Sor Range mine, Quetta P. O., Baluchistan.	North-Western Railway.	Ismail, (*m.*), 40, *Coal-cutter.*	Coal	Whilst carrying coal in an underground gallery, deceased was killed by a fall of roof.
29	3rd June, 4 A.M.	Huntodih mine, Mohuda P. O., Bihar and Orissa.	Huntodih Coal Co., Ld.	Kamini Harin, (*f.*), 22, *Coal-carrier.*	Coal	Deceased was loading coal in a gallery 9 feet high, when a mass of stone 11′ × 5′ × 14″, falling from the convergence of two concealed "slips" in the roof, struck her, killing her instantly. Inspection and inquiry made.
30	3rd June, 9-30 A.M.	Namdang mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Badal Khatick, (*m.*), 41, *Labourer.*	Coal	Whilst deceased was loading coal in an "opening" or chamber he was killed by a mass of coal, weighing about 2 cwt., which fell without warning from the roof 20 feet above. Inspection and inquiry made.

31	5th June, 10 P.M.	Malkera mine, Katrasgarh P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	(1) Ramgulam Noonia, (*m.*), 26; (2) Deshi Noonia, (*m.*), 22, *Coal-cutters.*	Coal	The two deceased broke down a fence and entered a disused gallery, apparently for the purpose of robbing coal from the sides of pillars. An area of roof stone, 20′×20′×4″, fell from a height of 8 feet 6 inches, killing one instantly and fatally injuring the other. Inspection and inquiry made.
32	9th June, 5 A.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Jiban Korah, (*m.*), 38, *Sirdar.*	Coal	Deceased and three other miners had been withdrawn from their working place by a Sirdar on account of the roof being dangerous. While the sirdar was absent arranging for timber, deceased went back to get his pick when an area of roof stone, 12′×7′×18″ thick, fell from a height of 8 feet. He was killed instantly. Inspection and inquiry made.
33	2nd June, 2-30 P.M.	Katras mine, Katrasgarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Khedan Teli, (*m.*), 23, *Coal-cutter.*	Coal	Deceased was casting back coal from a point a short distance behind his working face when a block of roof stone, 6′×3′×1′ 6″ thick, fell out at a "slip" and injured him so seriously that he died about 3 hours afterwards. Inspection and inquiry made.
34	27th June	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	See To Hoi., (*m.*), 30, *Labourer.*	Wolfram	Deceased, unknown to any one and probably with the intention of stealing ore, went into an adit. He was killed by a fall of roof. Inspection and inquiry made.
35	29th June, 2 A.M.	Noonodih mine, Jamadoba P. O., Bihar and Orissa.	The Bengal Iron Co., Ld.	Balai Mahato, (*m.*), 40, *Coal-cutter.*	Coal	Deceased while extracting a pillar in a coal seam, 8 feet thick, was killed by a mass of coal, 16′×8′—12′×1′ thick, and weighing 5 tons, which fell from the roof near a small "fault." Inspection and inquiry made.
36	6th July, 1 P.M.	Sikdardih mine, Giridih P. O., Bihar and Orissa.	Bayra Coal Association	(1) Gondo Dhobi, (*m.*), 50, *Stone-cutters' Sirdar*; (2) Daho Dhobi, (*m.*), 40, *Stone-cutter.*	Coal	The two deceased were employed in getting down unsound roof stone in an underground gallery. They were breaking up some stone which they had just ripped down when they were struck down by a mass of stone measuring 4′×1′ 6″×1′ 6″, which fell from a "slip" in the roof, 9 feet above. Gondo was killed on the spot, and Daho died shortly afterwards. Inspection and inquiry made.
37	7th July, 6-15 A.M.	Ekra mine, Bansjora P. O., Bihar and Orissa.	Maharajah of Cossimbazar	(1) Sibdol Mahato, (*m.*), 36; (2) Sukar Mahato, (*m.*), 32; (3) Poona Mahato, (*m.*), 27, *Coal-cutters.*	Coal	One of the deceased went through a fence into a goaf to load some fallen coal. A fall of roof coal took place which pinned him down. The other two went to his rescue, but a further fall of 10 tons of coal occurred, completely burying the three men. Inspection and inquiry made. (*See Report, page 10.*)
38	14th July, 2 P.M.	Gararia mine, Kusunda P. O., Bihar and Orissa.	Gopiram Ram Chandra	Ganesh Bhuiya, (*m.*), 35, *Coal-cutter.*	Coal	Deceased was standing on a stool and cutting roof coal in a gallery 7 feet high, when a block, 7′×5′×3½′ thick, fell off at a "slip". Although he was to one side yet the stool was knocked over, and some of the coal fell upon his head and shoulders, killing him instantly. Inspection and inquiry made.
39	16th July, 11-30 A.M.	Kendwadih mine, Koirah Section, Kusunda P. O., Bihar and Orissa.	The East Indian Coal Co., Ld.	Paran Chamar, (*m.*), 35, *Sirdar.*	Coal	Deceased was a sirdar in charge of miners engaged in extracting a pillar. He went into a part which was fenced off and where there was fallen coal lying. Whilst he was testing the roof with a stick a piece of roof coal, 3 feet in diameter and 3 feet thick, fell on him from a height of 12 feet. He received injuries from which he died a few hours later. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial num.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*b*) Falls of roof—*contd.*			
40	17th July, 5 A.M.	Jamehari mine, Searsole P. O., Bengal.	Srimati Nistarini Dassi	(1) Matala Manjhi, (*m.*), 26; (2) Subda Manjhi, (*m.*), 25; (3) Puchu Manjhi, (*m.*), 30, *Coal-cutters.*	Coal	The deceased passed through a fence in order to obtain some loose coal on the goaf side of a pillar under extraction. A mass of roof coal, 7½′×6′×3′, fell from a height of 15 feet, killing two men outright, and injuring three others, one of whom died within an hour. Inspection and inquiry made.
41	20th July, 11-30 P.M.	Dongar Chickli mine, Parasia P. O., Central Provinces.	Central Penoh Coal Co., Ld.	Goreylal Goalia, (*m.*), 28, *Timberman.*	Coal	Deceased was one of six timbermen who were repairing the roof on a haulage road at a point where a fall had taken place. Whilst so engaged another fall of roof took place, and the deceased was buried under the debris. Death was due to shock and suffocation. Inspection and inquiry made.
42	22nd July, 7-30 A.M.	Jealgora mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Gurbari Telini, (*f.*), 25, *Coal-carrier.*	Coal	A piece of roof coal, about 8′×5′×1′, fell from a height of 7½ feet, and, striking deceased, who was passing under it at the moment, killed her on the spot. Inspection and inquiry made.
43	27th July, 5-0 A.M.	Jotejanaki mine, Toposi P. O., Bengal.	P. K. Chatterji & Bros.	Purna Mashi Bhar, (*m.*), 35, *Coal-cutter.*	Coal	Deceased, with two other miners, was employed in a dispillaring district, and was undercutting a pillar when a slab of stone, 7′×4′×6″, fell from a height of 11 feet, killing him instantly. Inspection and inquiry made.
44	28th July, 4 P.M.	South Govindpur mine, Katrasgarh P. O., Bihar and Orissa.	South Govindpur Colliery, Ld.	Monger Meah, (*m.*), 20, *Labourer.*	Coal	Deceased was employed in a district where pillars in a seam, 5 feet thick, were being extracted. In throwing down two props which he had been carrying he knocked out another prop and brought about a fall of roof stone, 6′×2′×6″, which killed him instantly. Inspection and inquiry made.
45	9th August, 4 A.M.	Ledo Valley (New West) mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Maundai Chetri, (*m.*), 25, "*Opening man.*"	Coal	Deceased was working in an underground chamber when a piece of coal, 3′×2′ 6″×1′, fell from a height of 7 feet, killing him instantly. Inspection and inquiry made.
46	12th August, 2 P.M.	Nandi mine, Nandi P. O., Bengal.	Adjai Coal Co., Ld.	Mohar Chamar, (*m.*), 42, *Coal-cutter.*	Coal	Deceased was engaged in cutting coal on the corner of a pillar. Some roof coal fell in an adjoining goaf, and he passed through a fence to pick it up, when a piece of shale, 2′ 6″×2′×9″, fell on to him from a height of 17 feet. He sustained serious injuries and died a fortnight later. Inspection and inquiry made.

47	25th August, 9-30 A.M.	Seebpore mine, Charanpur P. O., Bengal.	Katras Jheriah Coal Co., Ld.	(1) Suphal Manjhi, (*m.*), 31 ; (2) Dasu Manjhi, (*m.*), 25 ; (3) Suka Manjhi, (*m.*), 26 ; (4) Bhatoo Kole, (*m.*), 14, *Coal-cutters.*	Coal	Three of the deceased were engaged in cutting roof coal near the edge of a large goaf when it came on 'weight.' A mass of roof coal, weighing about 40 tons, was released from between two parallel "slips," and fell suddenly from a height of 12 feet on to the deceased, two of whom were killed instantly. Another coal-cutter who was passing was killed on the spot, and Suphal Manjhi sustained serious injuries to which he succumbed two hours later. Inspection and inquiry made. (*See Report, page 11.*)
48	2nd September, 8-30.	Ledo Valley (Old West) mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Charsomboy, (*m.*), 35, *Coal-tanner.*	Coal	Deceased was working in an underground gallery when a piece of coal, weighing about one ton, fell from the roof at a height of 6 feet, killing him instantly. Inspection and inquiry made.
49	12th September, 2 P.M.	Kantapahari mine, Asansol P. O., Bengal.	The Burrakur Coal Co., Ld.	Thakur Manjhi, (*m.*), 38, *Coal-cutter.*	Coal	Deceased and another miner left their working place and commenced to cut coal from the side of a pillar on a main level, when a piece of stone, weighing about 2 cwt. and measuring 2′×1′×9″, fell on deceased from a height of 9 feet. He sustained serious injuries to which he succumbed a few hours later. Inspection and inquiry made.
50	15th September, 8-30 A.M.	Damudapur mine, Nandi P. O., Bengal.	The Bengal Coal Co., Ld.	Lokhoo Manjhi, (*m.*), 25, *Coal-cutter.*	Coal	Three coal-cutters were engaged in extracting a pillar in a coal seam, 9 feet thick. Deceased after cutting the coal sat under the newly exposed roof, when a triangular piece of stone, measuring 5′ ×2′ ×8″ to 2″ and weighing about 12 cwt., fell on him from a height of 5 feet. He sustained serious injuries to which he succumbed half-an-hour later. Inspection and inquiry made.
51	15th September, 3-30 P.M.	Sendra mine, Bansjora P. O., Bihar and Orissa.	Sendra Coal Co., Ld.	(1) Nayan Manjhi, (*m.*), 26 ; (2) Jugal Manjhi, (*m.*), 28 ; (3) Choorki Mejhian, (*f.*), 16, *Coal-carriers.*	Coal	The deceased left the gallery in which they had been told to work by the sirdar and went into a disused gallery the entrance of which was fenced. Whilst they were robbing coal from the side a mass of stone, weighing about 7 tons, and measuring 10′ × 6′ 6″ × 3′ 6″, fell from between two 'slips' in the roof at a height of 10 feet. They were killed instantly. Inspection and inquiry made.
52	20th September, 4 A.M.	Ledo Valley (New East) mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Gonia Oria, (*m.*), 25, *Trammer.*	Coal	Deceased was working in an underground gallery when a piece of coal 4′×3′ 6″×2′, fell from a height of 5 feet, inflicting injuries from which he died an hour later. Inspection and inquiry made.
53	1st October, 1-30 P.M.	Joba mine, Kalipahari P. O., Bengal.	Burrakur Coal Co., Ld.	Sukee Kole, (*f.*), 25, *Coal-carrier.*	Coal	Deceased, inspite of being warned not to do so, walked under roof which was being dressed, when a piece of shale, measuring 5′ × 3′ × 9″, and weighing 14 cwt., fell upon her from a height of 12 feet, killing her instantly. Inspection and inquiry made.
54	19th October, 11-30 A.M.	South Bulliari mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Raman Chamarin, (*f.*), 45, *Coal-carrier.*	Coal	Deceased and two other women were sitting down at the junction of four roads waiting for their miners to come to work. A piece of shaley coal, measuring 10′ × 4′ × 1′, fell from the roof 10 feet above. Deceased was killed instantly and the other two women were seriously injured. Inspection and inquiry made.
55	20th October, 2-30 A.M.	Damudapur mine, Nandi P. O., Bengal.	The Bengal Coal Co., Ld.	Jalee Mejhian, (*f.*), 20, *Labourer.*	Coal	Deceased was working in an underground gallery when a portion of the roof, weighing about 35 cwt., fell from a height of 12 feet, killing her instantly. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*concld.*			
			(*a*) Falls of roof—*concld.*			
56	28th October, 10 A.M.	Kongon mine, Kongon P. O., Assam.	Nazira Coal Co., Ld.	Gopal Ghatwall, (*m.*), 35, *Trammer.*	Coal	Deceased was working in an underground gallery, when a piece of stone, 3′×1′ 6″×1′, fell on him from a height of 7 feet, inflicting injuries from which he died almost immediately. Inspection and inquiry made.
57	1st November, 8 P.M.	Sendra mine, Bansjora P. O., Bihar and Orissa.	Sendra Coal Co., Ld.	Lakoo Turi, (*m.*), 24, *Coal-cutter.*	Coal	Deceased was dressing down some overhanging coal, when a piece of coal, 4′×3′×18′, weighing about ½ ton, fell unexpectedly from a height of 6 feet. He was struck on the forehead and killed instantly. Inspection and inquiry made.
58	6th November, 12 A.M.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Mun Key Atin, (*m.*), 32, *Tribute miner.*	Wolfram	Whilst deceased was engaged in timbering a tunnel he was killed by a fall of roof. Inspection and inquiry made.
59	13th November, 5 A.M.	Dumarkunda mine, Chirkunda P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	(1) Lakhoo Bhuya, (*m.*), 30; (2) Ram Lal Bauri, (*m.*), 21, *Prop-setters*; (3) Bhabi Baurin, (*f.*), 19, *Coal-carrier.*	Coal	The three deceased went through a fence into a disused gallery. A mass of roof, 15′×10′×2′, fell from a height of 6 feet, and buried them. They were killed instantly. Inspection and inquiry made.
60	16th November, 10 P.M.	Haripur mine, Chora P. O., Bengal.	Baraboni Coal Concern, Ld.	Budri Manjhi, (*m.*), 35, *Coal-cutter.*	Coal	Deceased passed through a fence and entered a disused underground gallery. A piece of coal, weighing 14 lbs., fell from a height of 10 feet, inflicting injuries to the right foot. He died of septic gangrene seven days later. Inspection and inquiry made.
61	17th November, 6-45 P.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Pullaraj, (*m.*), 35, *Labourer.*	Lead ore	Whilst going into the mine through the main adit level deceased was struck by a fall of loose ground. He sustained a compound fracture of the right leg and died three months later.
62	19th November, 12 noon.	Dharmaband mine, Katrasgarh P. O., Bihar and Orissa.	D. N. Ghosh & Bros.	Ram Kissan Lodh, (*m.*), 25, *Stone-cutter.*	Coal	Deceased was engaged in removing debris at a point where the roof of an incline had been blasted down, to give increased height. A piece of stone, measuring 11′×11′ 5″, fell upon him from a height of 6½ feet. He was killed instantly. Inspection and inquiry made.
63	20th November, 1 P.M.	Namdang mine, Margherita P. O., Assam.	Assam Railway and Trading Co., Ld.	Baiza Nath Koot, (*m.*), 35, *Coal-filler.*	Coal	Deceased was killed by the unexpected fall of a mass of roof coal, 30′×14′×7′, in an "opening" or chamber.

64	30th November, 2 A.M.	Kurhurbaree mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Co.	Kailu Manjhi, (*m.*), 22, *Coal-cutter.*	Coal	Deceased was apparently sleeping in his working place, when a mass of stone, 14″×4″×18″, fell from a height of 6 feet. He was struck on the head, and died almost immediately. Inspection and inquiry made.
65	7th December, 5 A.M.	Khost mine, Khost P. O., Baluchistan.	North Western Railway	Ghulam, (*m.*), 40, *Coal-cutter.*	Coal	Deceased was driving a main level in a coal seam 5 feet thick, where 1½ feet of the shale roof was being taken down to make height. He undercut too far in the coal, and was killed by a fall of shale measuring 4′ × 2½′ × 1′.
66	20th December, 5 A.M.	Ledo-Valley mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Burga Bahadur, (*m.*), 20, *Coal-puller.*	Coal	Deceased was killed by a fall of coal from the roof of an "opening" or "chamber."
67	24th December, 1-45 P.M.	Chanch mine, Chirkunda P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Ramchand Mallick, (*m.*), 45, *Coal-cutter.*	Coal	Deceased was cutting coal from the roof of a gallery without orders, when a mass of coal, 7′ × 7′×2′ 6″, fell from altheight of 7 feet 6 inches, on to him killing him instantly. Inspection and inquiry made.
68	26th December, 10 A.M.	Borrea mine, Sitarampur P. O., Bengal.	New Beerbhum Coal Co., Ld.	Budhai Ahir, (*m.*), 25, *Coal-cutter.*	Coal	Deceased was testing the roof in an underground gallery when a mass of roof coal, weighing about 13 cwt., fell from a height of 12 feet, burying him and killing him instantly. Inspection and inquiry made.
			(*b*) **FALLS OF SIDES**—(*91 deaths*).			
69	1st January, 5 P.M.	South Bulliari mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Sundri Mejhian, (*f.*), 55, *Coal-carrier.*	Coal	Deceased was loading a basket in her working place, when a block of side coal, weighing about 15 cwt., slipped down from the corner of a pillar and rolled over upon her, inflicting injuries from which she died 4 hours later. Inspection and inquiry made.
70	19th January, 1 A.M.	Serampur mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Co.	Rupia Dusadhin, (*f.*), 35, *Coal-carrier.*	Coal	Deceased was loading coal near a pillar the side of which was supported by two sprags. The support proved to be insufficient, and a mass of side coal fell upon the deceased, causing fatal injuries.
71	21st January, 9 P.M.	Kungkha mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Low Choo, (*m.*), 32, *Labourer.*	Iron ore	Deceased sustained fatal injuries by a fall of rock in a quarry.
72	27th January, 2-15 P.M.	Gopalichuck Head mine, Jharia P. O., Bihar and Orissa.	Gopalichuck Coal Co., Ld.	Kedar Kora, (*m.*), 30, *Coal-cutter.*	Coal	Deceased passed through a fence in a quarry and commenced to rob coal from the sides which were overhanging. A mass of coal and stone, measuring 3′ 6″ ×1′ 6″×30′. fell from a height of 9 feet, killing him instantly. Inspection and inquiry made.
73	29th January, 9 A.M.	East Bagdiggi mine, Jharia P. O., Bihar and Orissa.	East Bagdiggi Colliery Co.	(1) Robi Dhobi, (*m.*), 45; (2) Dukan Rajwar, (*m.*), 32; (3) Sadoo Ray, (*m.*), 25; *Coal-cutters*; (4) Poorki Rajwarin, (*f.*), 16; (5) Rosni Gorain, (*f.*), 18, *Coal-carriers.*	Coal	The deceased persons with seven others were engaged in cutting and carrying coal and stone in a quarry at the foot of an overhanging mass of roof stone and coal when a fall of stone and coal, 33′×6′×1′ to 3 feet thick, suddenly occurred, killing them instantly. Inspection and inquiry made. (*See Report, page 11.*)

Fatal Accidents, 1921—*contd.*

Serial number.	Dat and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			(*b*) **FALLS OF SIDES**—*contd.*			
74	29th January, 5 P.M.	Bandarchoca mine, Mugma P. O., Bihar and Orissa.	S. N. Bose	Badi Koiri, (*m.*), 30, *Coal-cutter.*	Coal	Deceased was cutting coal in a quarry below some overhanging masonry which was resting on the top of a coal seam 30 f et thick. A piece of the masonry, measuring 5′ × 3′ × 2′, fell from a heights of 10 feet, killing him instantly. Inspection and inquiry made.
75	20th February, 1-0 A.M.	Tikak Lower mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Lalsing Lama, (*m.*), 26, *Tub-filler.*	Coal	Deceased was working in an underground chamber when a mass of coal, weighing about a ton and a half fell, from the side of a pillar. Deceased sustained injuries from which he dil ten minutes later. Inspection and inquiry made.
76	16th February, 7 A.M.	Bansdeopur mine, Kusunda P. O., Bihar and Orissa.	Bansdeopur Coal Co., Ld.	Pilla Chamar, (*m.*), 36, *Coal-cutter.*	Coal	Deceased left his working place and went to a place about 200 feet distant, where he took down a fence and commenced cutting coal from the side of a gallery 24 feet high. A block of coal, about 10 feet high × 5′ × 2′ thick, fell off the side and injured him so seriously that he died within a few hours. Inspection and inquiry made.
77	23rd February, 11 A.M.	Bhelatand mine, Sijua P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Sukar Turi, (*m.*), 28, *Coal-cutter.*	Coal	Deceased, with other miners, was extracting a pillar in a seam 6 feet high. He undercut the coal to a depth of 2′ 9″, with the result that a block of coal, measuring 2′ × 1′ 9″ × 8′ 6″, fell on his head and killed him. Inspection and inquiry made.
78	24th February, 1 P.M.	Bararee mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co.	Chuni Mejhian, (*f.*), 22, *Coal-carrier.*	Coal	The husband of deceased was robbing coal from the side of a pillar, and deceased was loading the coal. A mass of coal, 8′ × 8′ × 2′, fell from the side of the pillar, deceased sustained injuries to which she succumbed within an hour. Inspection and inquiry made.
79	19th March, 10 A.M.	Barora mine, Nowagarh P. O., Bihar and Orissa.	S. & J. Sarkar	Jungli Chamar, (*m.*), 22, *Coal-cutter.*	Coal	Deceased passed through a fence and went under some overhanging side coal either to steal soft coal or to shelter from the su when a mass of coal, about 10′ × 3′ by 1½′ thick, fell upon him from height of 6 feet, killing him instantly. Inspection and inquiry made.
80	19th March, 11 A.M.	Khirsado mine, Pench P. O., Central Provinces.	H. Verma & Munshi Kanhaiya Lall.	Sukla Pardhan, (*m.*), 14, *Labourer.*	Coal	Deceased undermined the side in a coal quarry, and was killed by a fall of overburden.
81	21st March, 2 P M.	Sodepur (8 pit) mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ld.	Tolu Teli, (*m.*), 45, *Stone-cutter.*	Coal	Deceased was engaged in dressing down coal on the side of a gallery. A pece of coal, 3′ × 2′ 6″ × 1′ 3″, broke away from two concealed "slips" at a height of 11 feet. Deceased was struck by the falling coal and sustained injuries to the leg which caused death three days later. Inspection and inquiry made.

82	25th March, 3-30 P.M.	Toktwe mine, Karathuri P. O., Burma.	Ma Kyon	Law Pah, (*m.*), 28, *Labourer.*	Tin ore .	Whilst at work in an open excavation deceased was killed by a fall of rock from a dump.
83	7-30 A.M.	Karhurbaree mine, Giridih P. O., Bihar and Orissa.	E. I. Railway Co. . .	Mangra Kole, (*m.*), 25, *Coal-cutter.*	Coal .	Deceased was employed in extracting a pillar of coal, 16 feet in height. There was a "slip" in the pillar and deceased had been told not to work in front of it, but to work from the end of the "slip." He disregarded these instructions and worked the coal parallel to the face of the "slip," with the result that a mass of coal, 5′×5′×3′, came away and killed him. Inspection and inquiry made.
84	30th March, 4 A.M.	Fularibad mine, Jharia P. O., Bihar and Orissa.	Fularibad Coal Co., Ld. .	Kodan Kurmi, (*m.*), 22, *Coal-cutter.*	Coal .	Deceased entered a fenced-off area to rob coal from the corner of a pillar. He set free at a "slip" a mass of coal, 6′×5′×2′ thick, which fell upon him and killed him instantly. Inspection and inquiry made.
85	31st March, 2-30 P.M.	Bagdiggi mine, Jharia P. O., Bihar and Orissa.	C. J. Smith	Phucha Manjhi, (*m.*), 35, *Coal-cutter.*	Coal .	Deceased was employed in cutting floor coal. He was robbing the corner of a pillar near his working place, when a mass of coal, weighing about 6 cwt., fell from a height of 11 feet. He received injuries from which he died next day. Inspection and inquiry made.
86	8th April, 1-30 P.M.	Bokaro Jharia mine, Jamuniatand P. O., Bihar and Orissa.	Agarwalla Brothers . .	Bishoo Roy, (*m.*), 28, *Coal-cutter.*	Coal .	Deceased was working in a coal quarry on the bank of a river where the roof of the coal seam consists of "weathered" rock which was overhanging. The upper portion of the coal seam was also overhanging. While he was loading coal a piece of coal, weighing about 80 lbs., fell upon him from a height of eighteen feet. He received injuries from which he died shortly after. Inspection and inquiry made.
87	9th April, 7-15 A.M.	Bhulanbavari mine, Jamadoba P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ld.	Makhan Bauri, (*m.*), 26, *Coal-cutter.*	Coal .	Deceased was employed in quarrying pillars of coal formed originally by underground mining. While he was cutting the coal forming the roof of an old gallery the roof collapsed. He fell into the gallery below, and was killed instantly. Another coal-cutter received slight injuries. Inspection and inquiry made. (*See Report, page 12.*)
88	14th April, 10-30 A.M.	Chinchuria mine, Asansol P. O., Bengal.	New Beerbhum Coal Co., Ld.	Banwari Kole, (*m.*), 20, *Pump attendant.*	Coal .	Deceased was working on a hand pump at the bottom of a cutting, twenty feet deep. A mass of earth, 34′×17′×4′ 6″, fell from the side without warning. Part of this earth fell on deceased killing him instantly. Inspection and inquiry made.
89	16th April, 2 P.M.	Murwara mine, Katni P. O., Central Provinces.	Seth Tehmurus Cowasji .	Ratan Katwar, (*m.*), 40, *Contractor.*	Limestone .	Deceased was killed by a fall of side in a quarry.
90	19th April, 6 P.M.	Karathuri mine, Mergui P. O., Burma.	Ma Me	Sin Yu., (*m.*), 30, *Labourer.*	Tin ore .	Deceased was killed by a fall of side whilst at work in an open cut.
91	25th April, 2 P.M.	Kachkuri mine, Ramtek P. O., Central Provinces.	Bansilal, Abirchand Mining Syndicate.	Wallombi, (*m.*), 40, *Labourer.*	Manganese ore.	Deceased was killed by a fall of overburden in an open working. Inspection and inquiry made.
92	27th April, 10-30 P.M.	Loyabad mine, Banajora P. O., Bihar and Orissa.	Burrakur Coal Co., Ld. .	Budhani Khuini, (*f.*), 28, *Coal-carrier.*	Coal .	Deceased was filling a basket at the face of a quarry when some soft coal, weighing about 3 cwt., fell of the face at a cleat from a height of about six feet. Her neck was broken and she died almost instantly. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			(*b*) **FALLS OF SIDES**—*contd.*			
93	28th April, 6-30 A.M.	Mosaboni mine, Rakha mines P. O., Bihar and Orissa.	Cordoba Copper Co., Ld.	Ram, Bhuiya, (*m.*), 18, *Labourer.*	Copper ore	Deceased was killed by a fall of side in a prospecting shaft, twenty-five feet deep. Inspection and inquiry made.
94	28th April, 2 P.M.	Katras mine, Katras P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Sona Manjhi, (*m.*), 14, *Coal-cutter.*	Coal	While deceased was cutting coal from a barrier in a seam 9 feet 6 inches thick, he was killed by a mass of side coal, 18′×9′×9′, which fell from a "slip." Inspection and inquiry made.
95	10th May, 5-45 A.M.	Alkusa South mine, Kusunda P. O., Bihar and Orissa.	Ranigunge Coal Association, Ld.	(1) Sanki Meah, (*m.*), 25, *Coal-cutter*; (2) Anwari Meah, (*m.*), 16; (3) Parna, (*f.*), 15, *Coal-carriers.*	Coal	Whilst the three deceased were sleeping in a gallery in the mine a mass of side coal, measuring 15′ ×8′, fell upon them from a height of 10 feet. They were killed instantly. Inspection and inquiry made. (*See Report, page 12.*)
96	10th May, 2-30 P.M.	Bansdeopur mine, Kusunda P. O., Bihar and Orissa.	Bansdeopur Coal Co., Ld.	(1) Barhan Roy, (*m.*), 35; (2) Etwari Roy, (*m.*), 25, *Coal-cutters.*	Coal	The deceased, with another coal-cutter, against orders, went inside a fenced area where the timber had been withdrawn to allow the top coal to fall. While engaged in loading fallen coal a mass of coal, weighing from 60-70 tons, fell from a height of ten feet. Barhan was killed instantly and Etwari died 10 weeks later. The other man was severely injured. Inspection and inquiry made.
97	10th May, 4-30 P.M.	Jamgram mine, Asansol P. O., Bengal	Burrakur Coal Co,. Ld.	Bhusan Kumar, (*m*), 26, *Coal-cutter.*	Coal	Deceased had undercut the coal from the side of a quarry, leaving the overburden overhanging. About two tons of the overburden suddenly fell on to deceased, killing him instantly. Inspection and inquiry made.
98	16th May, 11-30 A.M.	Sugi mine, Domchanch P. O., Bihar and Orissa.	F. F. Chrestien & Co., Ld.	Chito Kandoo, (*m.*), 25, *Labourer.*	Mica	Deceased was employed in picking mica from a dump. He was buried by a mass of debris which fell from the side of a hole, 5 feet deep, excavated in the dump. Death was due to suffocation. Inspection and inquiry made.
99	26th May, 3 P.M.	Khas Jharia mine, Jharia P. O., Bihar and Orissa.	Khas Jharia Colliery Co., Ld.	Katkani Roy, (*f.*), 26, *Coal-carrier.*	Coal	After attempting and failing by undercutting to bring down a large mass of coal from a "slip," deceased's husband commenced working on an adjacent pillar. Some time later while deceased was loading her basket a mass of coal, weighing about 3 tons, fell. Deceased received injuries from which she died three hours later. Inspection and inquiry made.

100	4th June, 7-30 P.M.	Bagdiggi mine, Jharia P. O., Bihar and Orissa.	Villiers Limited	(1) Premu Gorai, (*m.*), 25, *Coal-cutter*; (2) Khetu Gorain, (*f.*), 22, *Coal-carrier*.	Coal	Whilst the two deceased were sitting down in a narrow gallery, 26 feet high, and waiting for the sirdar to show them their working place a mass of some seven cwt. of coal fell from a "slip" in the side at a height of 20 feet. The woman was killed instantly, and the man received injuries from which he died some hours later. Inspection and inquiry made.
101	5th June, 2-30 P.M.	Khasra No. 1249, mine, Katni P. O., Central Provinces.	Chakori Lal Pathak	Phuliya, (*f.*), 13, *Labourer*.	Limestone	A piece of limestone fell from a stack on the edge of a quarry, rolled to the bottom of the quarry, and killed deceased by striking her on the head.
102	16th June, 10-30 A.M.	Real Kajora mine, Ondal P. O., Bengal.	Real Kajora Coal Co.	Kashi Nath Bauri, (*m.*), 33, *Sinker*.	Coal	Deceased was loading up debris which had fallen from a cavity in the side of a shaft. A mass of earth, weighing about 1½ tons, fell without warning from the cavity, and buried him. Death was caused by suffocation. Inspection and inquiry made.
103	17th June, 2-30 P.M.	Karmatand mine, Nudkhurkhi P. O., Bihar and Orissa.	Sreeram Coal Co.	Bigon Manjhi *alias* Bondhu Manjhi, (*m.*), 40, *Coal-cutter*.	Coal	Deceased was robbing the corner of a pillar when a mass of coal, weighing about 3 tons, fell from a height of 10 feet. He was killed instantly. Inspection and inquiry made.
104	18th June, 9-30 A.M.	Faridpore mine, Charanpur P. O., Bengal.	Poniati Coal Concern	Pana Bauri, (*m.*), 30, *Coal-cutter*.	Coal	Deceased was engaged in extracting a pillar of coal, 18 feet in height, and was levering coal from the side of the pillar, when a mass of coal, weighing about half a ton, fell over on to him, inflicting injuries from which he died on the following day. Inspection and inquiry made.
105	23rd June, 5 P.M.	Northern mine, Nowagarh P. O., Bihar and Orissa.	Northern Coal Co., Ld.	Ajnoo Mahato, (*m.*), 35, *Coal-cutter*.	Coal	Whilst deceased was robbing the side of the gallery in which he worked, he was injured by a mass of coal which fell from a concealed "slip" at a height of 7 feet. He died three days later. Inspection and inquiry made.
106	3rd July, 11 A.M.	Kalonta mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Lai Sein Sam, (*m.*), 35, *Labourer*.	Wolfram	Deceased was killed by a fall of side in an open working.
107	5th July	Foley mine, (Lease No. 58), Sharigh P. O., Baluchistan.	Baluchistan Coal Co., Ld.	Sanedin, (*m.*), 25, *Labourer*.	Coal	Whilst deceased was assisting a carpenter to fix timbers for the support of an underground gallery, a fall of side took place. He was struck by the falling stone and sustained injuries which terminated fatally within the hour.
108	14th July, 2-30 A.M.	Bhulanbararee mine, Jharia P. O., Bihar and Orissa.	The Bhulanbararee Coal Co., Ld.	Malati Mejhian, (*f.*), 13, *Coal-carrier*.	Coal	Deceased was killed by a mass of coal, which fell without warning from the side of a gallery at a height of five feet. Inspection and inquiry made.
109	15th July, 11-30 A.M.	Bhalgora mine, Jharia P. O., Bihar and Orissa.	The Bhalgora Coal Co., Ld.	(1) Gangia Kaharin, (*f.*), 36; (2) Somia Kaharin, (*f.*), 40, *Coal-carriers*.	Coal	A miner was engaged in dressing down overhanging coal on the side of a pillar. The two deceased, contrary to orders and in spite of repeated warnings, went into the place to load coal. A mass of coal, 9′×3′×2′, fell upon them killing them instantly. Inspection and inquiry made.
110	21st July 10 A.M.	Ballarpur mine, Ballarpur P. O., Central Provinces.	Bissesardass Daga and M. B. Dadabhoy.	Samdhi Kistana, (*m.*), 40, *Coal-cutter*.	Coal	Whilst engaged in undercutting in preparation for blasting, deceased exposed an unsuspected "slip." A mass of coal fell upon him, killing him instantly. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*b*) Falls of sides—*contd.*			
111	22nd July, 12 noon.	Keshoram Satgram mine, Raniganj P. O., Bengal.	Keshoram Poddar & Co.	Malindu Bauri, (*m.*), 14, *Labourer.*	Coal	Deceased, with two other sinkers, was engaged in dressing down the sides of a sinking shaft, 46 feet deep, when a piece of coal, weighing about 3 cwt., fell from the side through a vertical distance of 2 feet. A prop, 11 feet long, which was standing on the bottom and leaning against the side of the shaft, was struck by the coal and overturned, striking the deceased on the head. He sustained injuries to which he succumbed on the following day. Inspection and inquiry made.
112	29th July, 2 P.M.	South East Baraboni mine, Charanpur P. O., Bengal.	Maharaja of Cossimbazar	Bhatar Manjhi, (*m.*), 27, *Coal-cutter.*	Coal	Deceased entered a fenced area at the edge of a goaf to obtain some fallen coal. A mass of coal, weighing about ten tons, fell away from the side of a dyke. A portion of the coal struck deceased and buried him. He was killed instantly. Inspection and inquiry made.
113	7th August, 2 A.M.	Kendwadih mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Haru Meah, (*m.*), 32, *Coal-cutter.*	Coal	Deceased was engaged after blasting in dressing down overhanging coal in the lower portion of a coal seam when the coal suddenly came away in an unexpected direction and knocked him off his ladder. Some of the coal fell upon him killing him instantly. Inspection and inquiry made.
114	8th August, 9-30 A.M.	Yemon mine, Mergui P. O., Burma.	Mergui Tin Dredging Co., Ld.	Lee Joon Hteng, (*m.*), 60, *Tribute-miner.*	Tin ore	Deceased was killed by a fall of ground from the side of a "tailings" ditch. It was presumed that he had undermined the side whilst prospecting for ore.
115	14th August, 2 A.M.	Joba mine, Kalipahari P. O., Bengal.	Burrakur Coal Co., Ld.	Sew Lal Kurmi, (*m.*), 20, *Coal-cutter.*	Coal	Deceased was holding a light for a miner who was dressing loose coal from the side of a pillar. A piece of coal, 6′×4′ × 1′ was levered down. In falling it broke into several large pieces. One piece rolled over pinning deceased by the leg. Deceased sustained injuries from which he died thirty-seven hours later. Inspection and inquiry made.
116	19th August, 1 P.M.	Dhansar mine, Jharia P. O., Bihar and Orissa.	Dhansar Coal Co.	Agyain Chamar, (*m.*), 35, *Coal-cutter.*	Coal	Deceased left his working place, and passed through a fence into a disused part of the mine, and whilst robbing coal there he was killed by a mass of side coal, 8′×7′ × 1′ 6″, which fell away from a "slip." Inspection and inquiry made.
117	23rd August, 3 P.M.	Rajhara mine, Rajhara P. O., Bihar and Orissa.	The Bengal Coal Co., Ld.	Bhagawati Noonia, (*m.*), 30, *Coal-cutter.*	Coal	Deceased whilst robbing the side of a pillar was killed by a fall of side coal.
118	29th August, 11-30 A.M.	Industry mine, Jharia P. O., Bihar and Orissa.	Industry Coal Co., Ld.	Kasua Bauri, (*m.*), 21, *Engine khalasi.*	Coal	Deceased who was employed on the surface went underground and commenced to rob a pillar. He undercut the coal and caused a mass of coal, weighing 3 tons, to fall upon himself. He was killed instantly. Inspection and inquiry made.
119	8th September, 3 P.M.	Bhulanbararee mine, Patherdih P. O., Bihar and Orissa.	Bhulanbararee, Coal Co., Ld.	(1) Mangli Mejhian, (*f.*), 45; (2) Suki Mejhian, (*f.*), 14, *Coal-carriers.*	Coal	The deceased were carrying coal out of a quarry when the pathway subsided into an old gallery below. They were buried by the debris and when their bodies were recovered two hours later life was extinct. Inspection and inquiry made. (*See Report, page 12.*)

120	15th September, 2 A.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ltd.	Kyan Si Ye, (*m.*), 30, *Miner.*	Lead ore	Whilst deceased was sleeping in a stope, he was killed by a mass of ore, weighing about 50 lbs., which fell from a height of 5 feet. Inspection and inquiry made.
121	16th September, 1-30 P.M.	Pandeybera mine, Jharia P. O., Bihar and Orissa.	Busra Coal Co.	(1) Joran Kora, (*m.*), 40, (2) Kanai Kora, (*m.*), 32, *Coal-cutters*; (3) Rodane Kora, (*f.*), 34; (4) Julia Kora, (*f.*), 25; (5) Kali Sardarin, (*f.*), 35, *Coal-carriers.*	Coal	The deceased were engaged in cutting and carrying coal from the floor of a gallery 35 feet in height when a mass of coal, weighing about 200 tons, fell from a "slip" on one side of the gallery. They were buried and killed instantly. Inspection and inquiry made.
122	19th September, 10-30 A.M.	Kalonta mine, Tavoy P. O., Burma.	Burma Finance & Mining Co., Ltd.	Lee Htyain, (*m.*), 44, *Labourer.*	Wolfram	Whilst engaged in sluicing operations, deceased was killed by a fall of side in an open cut.
123	21st September, 5-30 P.M.	North Goneshpur mine, Nowagarh P. O., Bihar and Orissa.	C. A. Forbes	(1) Dinoo Hari, (*m.*), 20; (2) Ramjoy Hari, (*m.*), 30, *Coal-cutters*; (3) Rojony Harini, (*f.*), 16, *Coal-carrier.*	Coal	The deceased left their working places at the end of the shift, and went through a fence into old workings to rob coal. They had filled only two baskets when a mass of coal, 15′×8′×4′, weighing 17 tons, fell from the side of a pillar. They were killed instantly. Inspection and inquiry made.
124	23rd September, 6 A.M.	Jharia Khas mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Moalla Loathe, (*m.*), 25, *Coal-cutter.*	Coal	While deceased was on a ladder taking down some loose overhanging coal, which remained after a shot had been fired, the ladder slipped and he fell to the ground. At the same time a piece of coal which he had been levering fell on top of him causing injuries from which he died 6 hours later. Inspection and inquiry made.
125	23rd September, 12-30 P.M.	Benahir mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Nissado Mallick, (*f.*), 16, *Coal-carrier.*	Coal	After a shot had been fired in the corner of a new gallery deceased was filling away the fallen coal when a mass of overhanging coal, weighing about 5 tons, fell on her. She received injuries from which she died a few hours later. Inspection and inquiry made.
126	24th September, 6-55 A.M.	Kathe mine, Mogok P. O., Burma.	Burma Ruby Mines, Ld.	Aik Ho, (*m.*), 26, *Labourer.*	Rubies	Deceased was killed by a fall of side in an open working.
127	24th September, 11 A.M.	Datla mine, Jamai P. O., Central Provinces.	Mathura Prasad Motilall & Co.	Gianea (*m.*), 20, *Coal-cutter.*	Coal	Deceased attempted to undermine an irregular pillar of coal and stone in a quarry. A piece of stone, 3′×2′×2′, fell upon him, causing fatal injuries. Inspection and inquiry made.
128	1st October, Noon.	Suratar Sonalibad mine, Jharia P. O., Bihar and Orissa.	Ramjash Agarwala	Chamu Keot, (*m.*), 30, *Coal-cutter.*	Coal	A piece of coal, 4′ × 1′ 8″ × 1′ fell from the side of a gallery from a height of 20 feet, and a portion of it struck deceased on the head and back causing injuries from which he died two hours later. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			(b) FALLS OF SIDES—*concld.*			
129	2nd October, 10 A.M.	Awadaung mine, Mergui P. O., Burma.	J. F. Leslie . . .	Bighor, (*m.*), 25, *Labourer.*	Tin ore .	Deceased was killed by a fall of side in an open-cut.
130	3rd October, 1 P.M.	Dhorakola mine, Ganwan P. O., Bihar and Orissa.	Banarsi Prosad Chowdhury.	(1) Bisni Turin, (*f.*), 14 ; (2) Chomni Turin, (*f.*), 12, *Labourers.*	Mica .	The deceased were loosening and cleaning up debris at the foot of the side of a quarry, when a piece of schist, measuring 3′ × 2′ 6″ × 1″, fell from a "slip" from a height of 6 feet on to them. Bisni Turin was killed on the spot, and Chomni Turin sustained serious injuries to which she succumbed a few hours later. Inspection and inquiry made.
131	20th October, 10-30 A.M.	Kalithan Suratar mine, Jharia P. O., Bihar and Orissa.	K. B. Seal & Sons . .	Jotsna Ghatwalin, (*f.*), 35, *Coal-carrier.*	Coal .	While four women were loading coal which had been blasted down from a pillar under extraction, a mass of coal, 9′ × 9′ × 1′ thick, fell from a "slip." Deceased was struck down and died immediately after being extricated. Another of the women received severe injuries. Inspection and inquiry made.
132	9th November, 2 P.M.	Benahir mine, Jharia P. O., Bihar and Orissa.	The Standard Coal Co., Ld.	Bhadi Baurin, (*f.*), 35, *Coal-carrier.*	Coal .	Deceased worked in a pillar extraction area, and was filling a basket with coal, when a piece of coal, measuring 15″ × 10″ × 10″, fell off the side of a pillar from a height of 20 feet and struck her on the head. She was killed instantly. Inspection and inquiry made.
133	11th November, 4 P.M.	Khost mine, Khost P. O., Baluchistan.	North-Western Railway .	Feroz, (*m.*), 19, *Propsman.*	Coal .	Whilst deceased was engaged in timbering a long-wall face in a steeply inclined coal seam the floor of the seam slipped, carrying away the timber. Deceased fell into the goaf and was buried. He was suffocated.
134	12th November, 11 A.M.	Ackhalpur mine, Nandi P. O., Bengal.	Hariladih Coal Co., Ld. .	Kaman Bauri, (*m.*), 32, *Stoker.*	Coal .	Deceased was working in a pit bottom with 4 other persons when a triangular piece of stone, 2′×3′ to 6″×3′, fell from a "slip" in the side of the shaft about 12 feet from the bottom. He was struck on the head and killed instantly. Inspection and inquiry made.
135	18th November, 1-30 P.M.	Budruchuck mine, Sijua P. O., Bihar and Orissa.	Budruchuck Coal Mining Co., Ld.	Salga Manjhi, (*m.*), 30, *Coal-cutter.*	Coal .	Deceased was engaged in cutting coal from the side of a pillar to permit of the straightening of a tram line. He undercut too far, and a wedge-shaped piece of coal, 8′×6′×2′, weighing 1½ tons, fell upon him from a height of 9 feet. He received injuries from which he died 24 hours later. Inspection and inquiry made.
136	25th November, 4-30 P.M.	Bararee mine, Jharia P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	(1) Rabni Korini, (*f.*), 15 ; (2) Nidu Baurin, (*f.*), 18, *Coal-carriers.*	Coal .	The deceased were loading coal shortly after a shot had been fired. A piece of coal, 4′×3′×2′, weighing 10 cwt., fell from a height of 16 feet, and rolling from the top of a heap of loose coal, struck the deceased, crushing them against the side of a pillar. One of the deceased was killed instantly, and the other died shortly afterwards. Inspection and inquiry made.

137	2nd December, 5-30 P.M.	Jealgora No. 2 Pit, mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	(1) Somar Meah, (*m.*), 16, *Stone-cutter*; (2) Madan Meah, (*m.*), 36, *Sirdar.*	Coal	The deceased were engaged in cleaning out the undercut made by a coal-cutter, when a mass of coal, 12′×6′×4′, weighing 10 tons, fell from the side. The deceased were seriously injured and died two hours later. Inspection and inquiry made.
138	12th December, 11 A.M.	Shampur mine, Nirshachatti P. O., Bihar and Orissa.	S. B. Chatterjee . .	Rajo Gor, (*f.*), 30, *Coal-carrier.*	Coal	Deceased was working in an open cut, when a mass of earth, 8′×2′×2′, fell upon her from a height of 3 feet. She sustained injuries to the head and died almost immediately. Inspection and inquiry made.
139	23rd December, 12 noon.	Kalimati mine, Kumerdubi P. O., Bihar and Orissa.	Patel Bros. & Co. . .	Mirja Manjhi, (*m.*), 35, *Coal-cutter.*	Coal	Deceased and another miner were sitting under some overhanging coal at the side of a quarry when a mass of coal weighing about 10 cwt., fell from a height of 8 feet, inflicting injuries to deceased which proved fatal and minor injuries to the other man. Inspection and inquiry made.
140	24th December, 4-30 P.M.	Kalythan Angarpathra mine, Katrasgarh P. O., Bihar and Orissa.	Mukherji and Dutt .	Anachi Bhuiyan, (*f.*), 18, *Coal-carrier.*	Coal	Deceased was loading coal in a quarry, when a piece of coal, 4′ ×2′ ×1′, fell from a height of 5 ft. She was fatally injured and died an hour later. Inspection and inquiry made.
			IN SHAFTS—(*17 deaths*).			
			IN SHAFTS—ROPES AND CHAINS BREAKING—(*7 deaths*).			
141	5th August, 10-30 A.M.	Bhalgora mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., Ld. .	(1) Bhadai Shaw, (*m.*), 38; (2) Kajani Chamar, (*m.*), 14, *Stone-cutters.*	Coal	While a bucket containing water was being raised in a shaft, 365 feet deep, an overwind took place. The detaching hook acted, but the link attaching the bucket chains to the hook broke. The bucket dropped to the bottom where 8 persons were at work. The two deceased sustained fatal injuries. Inspection and inquiry made.
142	12th August, 2 P.M.	Chaneh mine, Chirkunda P. O., Bihar and Orissa.	Bengal Coal Co., Ld. .	(1) Mohan Kumar, (*m.*), 28; (2) Lochan Meah, (*m.*), 26, *Sinkers.*	Coal	The deceased were working at the bottom of a sinking shaft, 525 feet deep. Owing to the breaking of a winding rope, a loaded bucket fell a distance of 500 feet, killing Mohan instantly and inflicting injuries to Lochan from which he died a few hours later. Inspection and inquiry made.
143	17th September, 4-30 A.M.	Chaneh mine, Chirkunda P. O., Bihar and Orissa.	Bengal Coal Co., Ld. .	(1) Choa Hazra, (*m.*), 40; (2) Jhabon Hazra, (*m.*), 28, *Sinkers.*	Coal	The two deceased and seven other sinkers were working at the bottom of a sinking pit 540 feet deep. Water was being raised in a bucket. When 40 feet from the top the detaching hook failed and the bucket fell to the bottom and on to the deceased. Choa Hazra was killed instantly, and Jhabon Hazra sustained serious injuries to which he succumbed shortly after. Inspection and inquiry made.
144	28th September, 8 P.M.	Hatgarooi mine, Sitarampur P. O., Bengal.	Burrakur Coal Co., Ld. .	Lakhan Kora, (*m.*), 30, *Onsetter.*	Coal	Whilst deceased was being lowered in a cage at a shaft, 200 feet deep, the winding rope broke and the cage, which was about 45 feet from the top of the shaft fell to the bottom, killing him instantly. Inspection and inquiry made.
			IN SHAFTS—WHILST ASCENDING OR DESCENDING BY MACHINERY—(*1 death*).			
145	22nd April, 11-15 A.M.	Phularitand mine, Katrasgarh P. O., Bihar and Orissa.	Phularitand Coal Co., Ld	Takoor Telli, (*m.*), 22, *Sinker.*	Coal	Whilst deceased was being raised in a sinking shaft, 85 feet deep, he lost hold of the rope and fell to the bottom, a distance of 25 feet. He received injuries from which he died a few hours later. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			IN SHAFTS—FALLING INTO THE SHAFT FROM THE SURFACE—(*3 deaths*).			
146	31st May, 7-30 P.M.	Patmohna mine, Sitarampur P. O., Bengal.	Patmohna Collieries, Ld.	Shukri Beldarin, (*f.*), 30, *Labourer.*	Coal	Deceased was drawing water from an old shaft in the dark. She slipped and fell into the shaft, and was drowned. Inspection and inquiry made.
147	2nd October, 4-30 P.M.	Mosaboni mine, Rakha Mines P. O., Bihar and Orissa.	Cordoba Copper Co., Ld.	Chinappa, (*m.*), 24-25, *Miner.*	Copper ore	Whilst at work at the top of a prospecting shaft, 110 feet in depth, deceased fell into the shaft and was killed. Inspection and inquiry made.
148	3rd December, 2-45 A.M.	Shampur mine, Mugma P. O., Bihar and Orissa.	Shampur Coal Co., Ld.	Phaudi Mahata, (*m.*), 35, *Bankeman.*	Coal	During the night shift, deceased, omitted to close the gate at the top of a winding shaft. He fell down the shaft, a distance of 113 feet and was killed instantly. Inspection and inquiry made.
			IN SHAFTS—FALLING FROM PART OF THE WAY DOWN—(*3 deaths*).			
149	16th April, 11 A.M.	Korrabad Nodia mine, Panuria P. O., Bengal.	Trans Adjai Collieries, Ld.	Amiruddin Meah, (*m.*), 20, *Mason.*	Coal	Deceased, with four others, was working on a bricking scaffold near the top of an air shaft, 62 feet deep. They were re-building a portion of the shaft lining. The ends of the frame of the scaffold were carried in recesses in the brick-work. An overload of building materials was placed on the scaffold, and one of the main timbers of its frame snapped. The scaffold canted, and two of the men were precipitated into the water at the bottom of the shaft. Deceased was drowned. The other men escaped without injury. Inspection and inquiry made.
150	8th July, 11 P.M.	Mosaboni mine, Rakha Mines P. O., Bihar and Orissa.	Cordoba Copper Co., Ld.	Govinda, (*m.*), 33, *Miner.*	Copper ore	While deceased was ascending the topmost ladder in a prospecting shaft he lost his hold and fell to the bottom, a distance of 100 feet. He was killed instantly. Inspection and inquiry made.
151	1st—8th September.	Marine mine, Kusunda P. O., Bihar and Orissa.	Marine Coal Co., Ld.	Lutam Kahar, (*m.*), 30, *Labourer.*	Coal	The body of deceased was found at the bottom of a winding shaft, 215 feet deep. The shaft was properly fenced both at the surface and at a mid-inset. Inspection and inquiry made.
			IN SHAFTS—THINGS FALLING FROM THE SURFACE—(*1 death*).			
152	26th December, 7 P.M.	Barmondiha mine, Sitarampur P. O., Bengal.	New Beerbhum Coal Co., Ld.	Budhan Doshad, (*m.*), 35, *Sinker.*	Coal	Deceased and six other men were working at the bottom of a sinking shaft, 103 feet deep, when the bankman, fell from the top of the shaft on to deceased, killing him instantly. The bankman was not seriously injured. Inspection and inquiry made.

			IN SHAFTS—THINGS FALLING FROM PART OF THE WAY DOWN—(3 deaths).			
153	8th October, 11 P.M.	Kargali mine, Bokaro P. O., Bihar and Orissa.	Great Indian Peninsula Railway Co.	Sahadeo Dosad, (*m.*), 20, *Pump attendant.*	Coal	Deceased was on a pump scaffold suspended at a point 15 feet above the bottom of a sinking shaft, 337 feet deep. A piece of stone fell from the side of the shaft and struck him, causing deep wounds. He fell to the bottom of the shaft and sustained a fracture of the spine. A sinker in the shaft bottom was injured by the falling stone. Inspection and inquiry made.
154	17th November, 11-30 A.M.	Rakha Hills mine, Rakha Mines P. O., Bihar and Orissa.	Cape Copper Co., Ld.	K. D Ramaya, (*m.*), 55, *Timber Mistry.*	Copper ore	Whilst a loaded skip was being raised in a shaft derailment took place. The skip overturned and its contents fell down the shaft, killing deceased who was at work further down the shaft. Inspection and inquiry made.
			IN SHAFTS—MISCELLANEOUS—(5 deaths).			
155	12th August, 9 A.M.	Katras mine, Katrasgarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	(1) Rate Kumar, (*m.*), 18 ; (2) Gurudayal Moodi, (*m.*), 24 ; (3) Nurah Khan, (*m.*), 34, *Sinkers.*	Coal	Five sinkers were standing on a scaffold suspended in a shaft from a winch at surface, and were engaged in dressing the sides of the shaft. Stone from the side of the shaft fell upon the scaffold, and its weight was sufficient to carry away the winch at surface, and to cause the scaffold to descend some 20 to 30 feet. The winch displaced some heavy fencing planks at the top of the pit, and these fell down the shaft, killing three of the men and injuring another. Inspection and inquiry made. (*See Report, page 13.*)
156	19th August, 7 A.M.	Jibutil mine, Morriston P. O., Madras.	Jibutil (Anantapur) Gold Mines, Ld.	Jimmie, (*m.*), 30, *Pumpman.*	Gold	Deceased whilst on duty at a steam pump fixed in a shaft lost consciousness owing to the high temperature in the shaft. He fell into water in the shaft and was drowned. Inspection and inquiry made.
157	27th October, 8-30 A.M.	Kujama mine, Jharia P. O., Bihar and Orissa.	K. & S. Nanjee	Goolu Mahata, (*m.*), 55, *Coal-cutter.*	Coal	Deceased, instead of using the pass-bye, and un-noticed by the onsetter, crossed the bottom of a shaft. He was caught by the descending cage, and received injuries from which he died two hours later. Inspection and inquiry made.
			BY EXPLOSIVES—(90 deaths).			
158	9th February, 2-30 P.M.	Jharia Khas mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ld.	(1) Joypal Chamar, (*m.*), 12 ; (2) Bhagwan Chamar, (*m.*), 16, *Coal-cutters.*	Coal	The deceased and another coal-cutter, were burned by the ignition of gunpowder in a miners' hut. The deceased died some hours later. Inspection and inquiry made.
159	20th February, 8 A.M.	Barkui mine, Pench P. O., Central Provinces.	Pench Valley Coal Co., Ld.	(1) Pardesi Kole, (*m.*), 18 ; (2) Dharua Kole, (*m.*), 14 ; (3) Bansa Gond, (*m.*), 15, *Bankmen* ; (4) Dasri Gondni, (*f.*), 18, *Coal-filler.*	Coal	A shot-firer placed 22 lbs. of gunpowder in a wooden tool chest underground. By some means unknown the powder became ignited and exploded. Five persons in the vicinity were severely burnt and four of them died subsequently. The shot-firer was prosecuted, convicted and sentenced to two years' imprisonment.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			BY EXPLOSIVES—*concld.*			
160	8th March, 12 A.M.	Kowabar mine, Jhumri-Tilaiya P. O., Bihar and Orissa.	A. C. Bose & Sons	Mongar Singh, (*m.*), 28, *Driller.*	Mica	Deceased was drilling a shot hole near another hole in which a shot had missed fire. The miss-fired charge exploded, causing injuries to which he succumbed the next day. Inspection and inquiry made.
161	1st April, 10 P.M.	Patrahi mine, Tisri P. O., Bihar and Orissa.	Joharmull Sundermull & Co.	Sohan Turi, (*m.*), 18, *Driller.*	Mica	A miss-fire had occurred in the previous shift. Whilst deceased was engaged in drilling a hole for a relieving charge the miss-fired charge exploded. He sustained injuries which caused his death a few hours afterwards.
162	24th April, 3-30 P.M.	Methapi mine, Sitarampur P. O., Bengal.	Alcih Coal Co., Ld.	Chutu Singh, (*m.*), 22, *Sinker.*	Coal	During sinking operations, a round of nine shots was fired in the sump. One shot miss-fired, and the explosives became mixed with the debris. Ten hours later, deceased with eighteen others was removing the debris, when the shot went off. Deceased, sustained injuries from which he died within an hour. Eight of the other men sustained slight superficial injuries. Inspection and inquiry made.
163	13th May, 6 A.M.	Nursamuda mine, Asansol P. O., Bengal.	Sitarampur Coal Co.	Behari Kurmi, (*m.*), 30, *Sinker.*	Coal	Two shots had been fired to relieve two miss-shots in a sinking shaft. An hour and a half later when deceased and other persons were cleaning up debris an explosion took place. Deceased was fatally injured and died 14 hours later. Another man was severely injured. Inspection and inquiry made.
164	29th June, 8 A.M.	Bhulanbararee mine, Jharia P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ld.	Bhairab Roy, (*m.*), 48, *Miners' Sirdar.*	Coal	Deceased was drying gunpowder in a pan over an open fire. He was in the act of stirring the powder when it caught fire and flamed up. He received burns from which he died six days later. Inspection and inquiry made.
165	19th June, 9 A.M.	Datla mine, Pench P. O., Central Provinces.	Pench Consolidated Coal Co., Ld.	Udhukiza Mehra, (*m.*), 30, *Coal-cutter.*	Coal	Deceased with another man had removed some gunpowder from a canister. One of the two men had been smoking, and presumably the gunpowder was accidentally ignited by means of a match or a cigarette end. Both men were slightly burnt. Deceased ran away from the hospital and stripped off his bandages. He died eleven days later. Inspection and inquiry made.
166	17th August, 6 A.M.	Alkusa North mine, Kusunda P. O., Bihar and Orissa.	Raniganj Coal Association, Ld.	Mahadeo Turi, (*m.*), 40, *Sirdar and shot-firer.*	Coal	Deceased was drying gunpowder in a basin in front of a fire, when a spark from the fire ignited the powder. He was severely burnt, and died five days later. Inspection and inquiry made.
167	17th August, 11-30 A.M.	Nandi mine, Nandi P. O., Bengal.	Adjai Coal Co., Ld.	Mangee Chamar, (*m.*), 40, *Coal-cutter.*	Coal	Deceased after having 3 lbs. of gunpowder issued to him, went to his quarters to cook food instead of going into the mine at once. His clothing became accidentally ignited, and in divesting himself of it he threw a piece of the burning cloth on to a tin canister containing the powder. The powder exploded and burnt deceased severely all over the body. He died on the following morning. Inspection and inquiry made.

168	1st September, 9-30 A.M.	Katras mine, Katrasgarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Guli Singh, (*m.*), 35, *Machineman.*	Coal	Deceased was trimming an open lamp when a piece of smouldering wick fell into some gunpowder which was close at hand. The powder was ignited, and deceased was severely burnt about the body. He died 12 days later. Inspection and inquiry made.
169	5th October, 8-30 P.M.	Craddock mine, Pench P. O., Central Provinces.	Central Pench Coal Co.	Rasan Pardhan, (*m.*), 15, *Labourer.*	Coal	Deceased had been assisting a shot-firer in making up gunpowder cartridges. There was a fire burning some 8 feet away. Whilst sweeping up loose powder which had fallen on the ground, the powder caught fire. Deceased sustained fatal injuries and another man was severely burnt. Inspection and inquiry made.
170	19th November, 1 P.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron & Steel Company, Ld.	(1) Benwari Singh, (*m.*), 24 ; (2) Jobraj Singh, (*m.*), 16 ; (3) Bikhari Singh, (*m.*), 30, *Coal-cutters.*	Coal	The deceased, one of whom was a shot-firer, were charging a shothole in roof coal. While pushing in the second cartridge of gunpowder it burst, and the gunpowder fell out and on to a lamp which was directy below the hole. This in turn ignited the powder in an open box which was standing close by. The deceased was severely burnt all over the body, and succumbed to their injuries a few hours later. Inspection and inquiry made.
171	9th December, 12 noon.	Jattachappa mine, Parasia P. O., Central Provinces.	Upper Pench Coal Co., Ld.	Kapusingh Thakur, (*m.*), 45, *Shot-firer.*	Coal	Deceased sustained fatal burns through an explosion of gunpowder. His deposition was that he had opened his powder tin, and his assistant threw a cigarette end into it. The assistant was slightly burnt.
			HAULAGE—(*32 deaths*).			
172	10th January, 7-30 P.M.	Kargali mine, Bokharo P. O., Bihar and Orissa.	Great Indian Peninsula Railway Co.	Ram Bux, (*m.*), 26, *Coal-cutter.*	Coal	Deceased was run over by a set of five tubs which was being lowered by hand down a slight incline in a quarry. He received injuries from which he died some hours later. Inspection and inquiry made.
173	24th January, 9-15 A.M.	Ballarpur mine, Ballarpur P. O., Central Provinces.	Rai Bahadur Bissesardas Daga and Sir M. B. Dadabhoy.	Pital Papi Lachmaru (*f.*), 40, *Trammer.*	Coal	Owing to the slipping of a clip on an endless haulage road a loaded tub ran wild killing deceased and injuring another man. Inspection and inquiry made.
174	9th February, 4 P.M.	Singrah mine, Mohuda P. O., Bihar and Orissa.	Singrah Coal Co., Ld.	Bidhua Dhobi, (*f.*), 13, *Labourer.*	Coal	The first tubs of a set of ten loaded tubs which was gravitating from the workings to a haulage incline derailed near the junction. Deceased, who was returning to work, was crushed between the side of the road and one of the tubs. She was killed instantly. Inspection and inquiry made.
175	13th February, 11 A.M.	South East Baraboni mine, Charanpur P. O., Bengal.	Maharaja of Cassimbasar	Manu Roy, (*m.*), 39, *Coal-cutter.*	Coal	Deceased had lowered a loaded coal tub down an inclined haulage road on to a level stretch. He had failed to secure a second tub which ran away, crashed into the first one and turned over. Deceased sustained serious injuries to the left leg and died two days later. Inspection and inquiry made.
176	3rd March, 7 P.M.	Ena mine, Jharia P. O., Bihar and Orissa.	North-West Coal Co., Ld.	Sona Mahato, (*m.*), 30, *Coal-cutter.*	Coal	Whilst a train of 10 empty tubs was being lowered on a haulage slope the three leading tubs became detached and ran wild for a distance of about 400 feet. Deceased, who was walking out of the mine at the time, was run over and killed. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			HAULAGE—contd.			
177	5th March, 2-30 P.M.	Pandaveswar mine, Pandaveswar P. O., Bengal.	Pandaveswar Colliery, Ld.	Niroo Bauri, (*f.*), 13, *Labourer.*	Coal	A tub, which was being loaded with coal, was standing on a road having a gradient of 1 in 30. The 'locker' or 'sprag' in the wheel of the tub slipped out and the tub ran forward on to deceased who was sitting on the line in front of it. She sustained serious injuries and died 2 days later. Inspection and inquiry made. (*See Report, page 13.*)
178	7th March, 1 A.M.	Khost mine, Khost P. O., Baluchistan.	North-Western Railway	Seif, (*m.*), 20, *Labourer.*	Coal	Whilst deceased was being raised in a tram in an inclined shaft the tram derailed. He attemped to get out of the tram, and was crushed between the tram and the shaft timbers, sustaining injuries which caused death within a few days.
179	16th March, 9-45 A.M.	Phularitand mine, Katrasgarh P. O., Bihar and Orissa.	Phularitand Coal Co., Ld.	Shibu Kahar, (*m.*), 27, *Surveyor's chainman.*	Coal	Whilst a train of six loaded tubs was being hauled up an incline a coupling gave way. Four of the tubs ran wild and collided with an empty tub. The latter fell on the deceased, killing him instantly. Inspection and inquiry made.
180	25th March, 1-30 P.M.	Joyramdanga mine, Asansol P. O., Bengal.	New Beerbhum Coal Co., Ld.	Ram Lall Mahato, (*m.*), 30, *Labourer.*	Coal	Whilst a set of seven loaded tubs was being hauled up an incline, five of the tubs became uncoupled and ran back down the incline. Deceased, who was walking up the incline at the time, failed to get out of the way and was killed. Inspection and inquiry made.
181	4th April, 5-30 P.M.	Samla Chatrisgonda mine, Pandaveswar P. O., Bengal.	Samla and Kendra Collieries, Ld.	Body Bauri, (*m.*), 24, *Pumpman.*	Coal	A train of three tubs had been hauled to the top of a haulage slope. A Sirdar took off the drag and uncoupled the rear tub, but omitted to turn over the points for the siding. The upper stop block had been left open, and the tub ran back down the incline, demolished a second stop block, and struck deceased, causing fatal injuries. Inspection and inquiry made. (*See Report, page 14.*)
182	10th April, 7-15 A.M.	Bhulanbararee mine, Jharia P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ld.	Majoo Gowala, (*m.*), 22, *Hookman.*	Coal	Deceased was riding on the front tub of a train of loaded tubs which was being hauled out of an incline. At the entrance to the mine he jumped off, fell and was run over. He received injuries which necessitated the amputation of his leg. He died two days later. Inspection and inquiry made.
183	25th April, 5 P.M.	Chittidand mine, Golpur P. O., Panjab.	Panjab Coal Co., Ld.	Nathoo, (*m.*), 22, *Labourer.*	Coal	Deceased was working underground at the bottom of a self-acting incline when the rope broke and the tubs ran wild. He was crushed between the tubs and the side of the road, receiving injuries from which he died 1½ hours later. Inspection and inquiry made.
184	13th May, 11 A.M.	Sripore mine, Kalipahari P. O., Bengal.	Lodna Colliery Co., Ld.	Khirl Korah, (*f.*), 15, *Coal-carrier.*	Coal	The deceased was walking along a haulage road when, hearing the approach of a loaded tub, she apparently lost her head and stepped in front of the tub. The tub ran over her, causing injuries to which she succumbed in hospital a month later. Inspection and inquiry made.

185	14th May, 12-14 P.M.	Rajhara mine, Rajhara P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Matukdhari Ram, (*m.*), 14, *Door-keeper.*	Coal	Deceased was employed in opening and closing a door on an underground haulage slope. The door was operated by a wire from a manhole. Hearing a runaway tub coming the deceased ran to the door and shouted a warning, but failed to get clear himself, and received injuries from which he died next day. Inspection and inquiry made.
186	21st May, 12-30 P.M.	Bansjora mine, Bansjora P. O., Bihar and Orissa.	Bansjora Coal Co., Ld.	Rupea Bhuiya, (*f.*), 25, *Coal-carrier.*	Coal	Whilst a set of seven tubs was being hauled up an incline of 1 in 3 the coupling of the first tub gave way causing six of the tubs to run wild to the bottom, where they smashed the buffer. Deceased who was standing below the buffer, was killed instantly. Inspection and inquiry made.
187	26th May, 3-10 A.M.	Ballarpur mine, Ballarpur P. O., Central Provinces.	Rai Bahadar Bissesardas Daga and Sir M. B. Dadabhoy.	Uttumpat Singh, (*m.*), 25 years, *Haulage attendant.*	Coal	Owing to the failure of another haulage attendant to release an unusually stiff clip on an endless haulage road a loaded tub was drawn against two other tubs which were being coupled by deceased. Deceased was crushed between the tubs and sustained injuries to the head which caused his death seventeen days later. Inspection and inquiry made.
188	9th June, 12 noon.	Chatrisgonda mine Pandaveswar P. O., Bengal.	Samla-Kendra Collieries, Ld.	Rakha Hari Dutta (*m.*), 40, *Hookman.*	Coal	Deceased was waiting for a set of empty tubs at the bottom of a haulage incline. Five empty tubs became uncoupled, ran down the incline, broke through stop block, and killed deceased. Inspection and inquiry made. (*See Report, page 14.*)
189	10th June, 10 A.M.	Jainty Central mine, Karmatar P. O., Bihar and Orissa.	Jainty Central Collieries, Ld.	Maku Mejhian, (*f.*), 14, *Labourer.*	Coal	Deceased and ten other persons were asleep in a manhole at the side of an underground haulage slope. Five empty tubs ran away from the bank head. Being awakened by the noise of the tubs coming down the incline, they ran out of the manhole and were struck by the tubs. Deceased was killed and three of the other persons were injured. Inspection and inquiry made. (*See Report, page 14.*)
190	26th June, 5 A.M.	Bhulanbararee mine, Jharia P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ld.	Muki Mejhian, (*f.*), 20, *Coal-carrier.*	Coal	A set of four loaded tubs was lowered too quickly on a dip haulage slope and it collided with another set of five loaded and four empty tubs which was resting against a buffer stop. The buffer stop was broken, and deceased was run over by the tubs and killed. Inspection and inquiry made.
191	30th June, 4-30 P.M.	Ledo Valley mine, Margheritta P. O., Assam.	Assam Railways and Trading Co., Ld.	Bhobey Jogi, (*m.*), 40, *Pony driver.*	Coal	Deceased was in charge of a pony which was hauling a train of tubs on an underground road. He was walking behind the train when the pony stopped, and he attempted to reach its head. The pony, however, started again, and deceased was crushed between the tubs and the side of the road, sustaining injuries which resulted fatally, three days later. There was ample room to pass on the other side of the train. Inspection and inquiry made.
192	14th July, 3-45 A.M.	Chowrassie mine, Dishergarh P. O., Bihar and Orissa.	Equitable Coal Co., Ld.	Kristo Bauri, (*m.*),35, *Hookman.*	Coal	As a set of full tubs was being drawn up an incline, one of the links in a shackle broke, causing six full tubs to run back. These tubs became derailed and crushed deceased against the side of the incline causing injuries from which he died three hours later. Inspection and inquiry made.
193	15th July, 7-30 P.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Dwarbar Mesh, (*m.*), 20, *Main gallery driver.*	Coal	Deceased was returning from work and was walking up a haulage incline, when he was struck by a derailed runaway tub. He received injuries from which he died shortly after. A separate travelling road was provided. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			HAULAGE—*concld.*			
194	16th July, 8 A.M.	Khost mine, Khost P. O., Baluchistan.	North-Western Railway	Wali Hussain, (*m.*), 30, *Bankman.*	Coal	Deceased was on duty as shaft attendant at an intermediate landing in a highly inclined shaft. A derailment occurred in the shaft, and, in attempting to climb up the shaft to assist in re-railing the train, he slipped and fell down the shaft, being killed instantly.
195	4th August, 11 A.M.	Huntodih mine, Jharia P. O., Bihar and Orissa.	Huntodih Coal Co., Ld.	Sibaroth Kurmi, (*m.*), 50, *Screen attendant.*	Coal	While a set of ten empty tubs was being lowered over the top of an incline the coupling hook next to the rope broke, and the tubs ran wild. Deceased was employed as a door attendant at the second level where a refuge place was provided. He lost his head and ran out in front of the tubs. He was run over and killed instantly. Inspection and inquiry made.
196	17th August, 9-30 A.M.	Kustore South mine, Kusunda P. O., Bihar and Orissa.	Raniganj Coal Association, Ld.	Subhotin Dhamorah, (*f.*), 35, *Coal-carrier.*	Coal	Deceased was walking along a main shaft level underground. Whilst she was crossing the foot of a haulage slope she was run over by runaway tubs, and sustained fatal injuries. Inspection and inquiry made.
197	24th August, 6 P.M.	Bhagaband mine, Jharia P. O., Bihar and Orissa.	Borrea Coal Co., Ld.	(1) Abdul Meah, (*m.*), 45, *Line Mistri*; (2) Monga Hasam, (*m.*), 25; (3) Chalkar Goala, (*m.*), 25, *Labourers.*	Coal	While a set of seven loaded tubs was being hauled up an incline the front coupling chain broke and the tubs ran wild. The three deceased, who were working at the entrance to a new cross-cut below the landing in use, were run over and killed. Inspection and inquiry made.
198	26th September, 5 P.M.	Bhalgora mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., Ld.	Gobind Sha, (*m.*), 25, *Labourer.*	Coal	Whilst a loaded tipping tub was being tried over a newly laid line it derailed and fell on deceased. He died ten hours later. Inspection and inquiry made.
199	1st October, 3-20 P.M.	Ballarpur mine, Ballarpur P. O., Central Provinces.	Rai Bahadur Bissesardass Daga and Sir M. B. Dadabhoy.	Yado Vidur, (*m.*), 32, *Trammer.*	Coal	At a junction on an endless haulage road there was room for three tubs to stand on an automatic stop-chock. The pin of the chock was removed, and ten tubs were placed there on sprags. The tubs ran wild and broke another chock further down the line. Deceased was run over and killed. Inspection and inquiry made.
200	3rd October, 8-30 P.M.	South East Baraboni mine, Charanpur P. O., Bengal.	Maharaja of Cassimbazar.	Aghore Mitter, (*m.*), 24, *Sircar.*	Coal	Deceased attempted to jump on to a train of tubs proceeding up an incline. He fell, and was carried along for a distance of 60 feet. He sustained serious injuries to which he succumbed three days later. Inspection and inquiry made.

201	15th October, 10-30 A.M.	Ledo Valley New West mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Gurul Chamar, (*m.*), 27, *Hookman.*	Coal	Deceased was standing at the bottom of an underground self-acting incline when a full tub overran the stop block at the top of the incline, ran down the incline, and crushed deceased against the side of the road, killing him instantly. Inspection and inquiry made.
			SUNDRIES UNDERGROUND—(*13 deaths*).			
202	22nd January, 9-30 P.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Jubsingh, (*m.*), 34, *Labourer.*	Lead ore	While deceased was shovelling ore into a shoot through an opening, 18" × 8 wide, he took fright at a small fall of ground above him. He stumbled and fell down the shoot, a distance of 30 feet. Death was instantaneous. Inspection and inquiry made.
203	29th January, 5 A.M.	Lakurka mine, Katasgarh P. O., Bihar and Orissa.	Lakurka Coal Co., Ld.	Noonia Mejhian, (*f.*), 35, *Coal-carrier.*	Coal	Deceased was emptying a basket of coal into a tub in a gallery underground when the basket overbalanced. In stepping back to avoid it she fell against the side of the gallery and injured her back. She died from her injuries two months later. Inspection and inquiry made.
204	6th April, 1-30 A.M.	Serampur mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Co.	Churo Chamar, (*m.*), 35, *Coal-cutter.*	Coal	Deceased whilst at work in a gallery 16 feet in height fell from a ladder and falling a distance of 9 feet sustained injuries to the head which resulted fatally shortly after. Inspection and inquiry made.
205	11th April, 8 P.M.	Seebpur mine, Charanpur P. O., Bengal.	Katras Jharia Coal Co., Ld.	Kusmi Baurin, (*f.*), 20. *Labourer.*	Coal	An empty tub fell from the cage into the sump at the bottom of a shaft, 600 feet deep. Deceased, who was employed at the pit bottom, was subsequently found drowned in the sump. Inspection and inquiry made.
206	7th July, 2 A.M.	Kantapahari mine, Asansol P. O., Bengal.	Burrakur Coal Co., Ld.	Pag Sing, (*m.*), 45, *Labourer.*	Coal	Deceased and ten other persons were ordered to hoist a motor by means of a winch and snatch block from a pump house situated in a roadway, dipping 1 in 3·5. Having hauled up the motor 75 feet, instructions were given to scotch it up to allow of the anchor for the snatch block being advanced. When slack rope was being given out from the winch in order to release the snatch block, the motor slipped back about 6 feet, and struck deceased on the thigh. He died from his injuries ten days later. Inspection and inquiry made.
207	14th August, 1 A.M.	Gush mine, Khost P. O., Baluchistan.	North-Western Railway.	Gulam Mohammad, (*m.*). 17; *Labourer.*	Coal	Whilst deceased was laying rails on a level in a highly inclined coal seam, a coal shoot broke away from its fastening and slipped down into the level. The end of the shoot struck deceased on the head, killing him instantly.
208	3rd September, 2-30 P.M.	Tikak Lower mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Leopok, (*m.*), 27, *Pony Driver.*	Coal	Deceased was driving a pony in an underground gallery when he was knocked down by the pony, sustaining injuries from which he died shortly after. Inspection and inquiry made.
209	15th October, 9-30 A.M.	Bawdwin mine, Namtu P. O., Burma.	Burma Corporation, Ld.	Fro Sey, (*m.*), 38, *Miner.*	Lead ore	Whilst at work underground deceased was struck by a piece of ore which fell from an upper level. He received fatal injuries.
210	25th October, 5-0 A.M.	Seebpore mine, Charanpur P. O., Bengal.	Katras Jharia Coal Co., Ld.	(1) Matroo Khan, (*m.*), 35, *Coalcutting Machine Mistry*; (2) Taroo But, (*m.*), 30, *Labourer.*	Coal	The deceased had been operating an electric coalcutting machine. They were found dead, presumably by electrocution. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			SUNDRIES UNDERGROUND—*concld.*			
211	7th November, 1 P.M.	Kajora mine, Ondal P. O., Bengal.	H. N. Pal Choudhury	Badi Pauri, (*m.*), 36, *Pump-khalasie.*	Coal	Deceased after signalling for steam from the surface to be admitted to an underground pump, failed to open the steam and water valves fitted on the steam range. A joint, 3'—6" distant from the pump, blew out, and deceased was severely scalded. He died eleven hours later. Inspection and inquiry made.
212	30th November, 4 A.M.	Namdang mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Kabilash Routh, (*m.*), 45, *Coal-puller.*	Coal	Whilst coal was being shovelled down a steep slope deceased failed to stand clear. He was struck by a lump of coal and sustained fatal injuries.
			SURFACE MACHINERY—(*3 deaths*).			
213	7th July, 10-45 P.M.	Dongar Chickli mine, Pench P. O., Central Provinces.	Central Pench Coal Co., Ld.	Nonkhey Teli, (*m.*), 20, *Surface Trammer.*	Coal	Deceased and another tramming coolie pushed a tub of coal so forcibly on to a tippler that the tippler overturned backwards carrying deceased over with it. He was precipitated into the wagon below, and killed instantly. Inspection and inquiry made.
214	20th July, 5-30 A.M.	Bejdih mine, Sitarampur P. O., Bengal.	The Equitable Coal Co., Ld.	Budhan Dosad, (*m.*), 25, *Labourer.*	Coal	Deceased and another coolie were turning the flywheel of a compressor by means of a lever when the lever being pushed only partially down the safety catch did not engage and the flywheel ran back about 2 inches. The end of the lever struck deceased on the jaw. He died some nineteen hours later. Inspection and inquiry made.
215	29th August, 12-10 P.M.	Kankani mine, Bansjora P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Khera Gowala, (*m.*), 25, *Labourer.*	Coal	Whilst the drum of a winding engine was being dismantled two round timbers 3 inches in diameter, were inserted through the spokes to prevent it from turning. When the bottom plate of the drum was dropped one of the timbers broke and the drum began to revolve. The other timber was carried round and struck deceased. He was crushed between the side of the drum and the foundation, and sustained injuries from which he died an hour later. Inspection and inquiry made.
			SURFACE BOILERS OR PIPES BURSTING— (*1 death*).			
216	21st August, 5 P.M.	Benahir mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Isharil Meah, (*m.*), 24, *Fireman.*	Coal	While the blow off cock of a boiler was being opened the joint between the cock and the pipe which leads the steam clear of the boiler house burst. Deceased who was standing near was scalded all over the body, and succumbed to his injuries on the following day.

ON SURFACE, RAILWAYS AND TRAMWAYS BELONGING TO THE MINE—(*4 deaths*).

217	1st January, 11-30 P.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Gokulchand, (*m.*), 32, *Brakesman.*	Lead ore	A collision took place between stationary and moving trains on an electric railway passing through an adit level. Deceased who was driving the moving train was killed.
218	7th January, 4-30 P.M.	Albion mine, Nowagarh P. O., Bihar and Orissa.	Albion Coal Co., Ld.	Surja Narayan Roy, (*m.*), 21, *Tubchecker.*	Coal	Deceased attempted to jump on to a train of tubs which was in motion. He slipped and a tub ran over his leg, which had to be amputated. He died from tetanus 12 days later. Inspection and inquiry made.
219	9th October, 10-30 A.M.	Tirody mine, Tirody P. O., Central Provinces.	D. Laxminarayan	Dukala, (*f.*), 45, *Labourer.*	Manganese ore.	Deceased whilst attempting to cross a tram line, slipped and fell, and was run over by a loaded tub. She sustained injuries to which she succumbed 12 days later.
220	31st December, 3-35 P.M.	Ballarpur mine, Ballarpur P. O., Central Provinces.	Kasturchand Daga and M. B. Dadabhoy.	Gaji, (*m.*), 30, *Labourer.*	Coal	Deceased was unloading a sand tub on a surface endless haulage road, owing to the failure of a haulage attendant to take off a haulage clip, a moving tub collided with a stationary tub. Deceased was thrown off and sustained fatal injuries.

MISCELLANEOUS ON SURFACE—(*12 deaths*).

221	3rd June, 9-30 P.M.	Mosabani mine, Rakha Mines P. O., Bihar and Orissa.	Cordoba Copper Co., Ld.	Nangi Nagi, (*f.*), 17, *Labourer.*	Copper ore	Whilst a bucket of water was being wound up a prospecting shaft some timber broke away from the side and struck the bucket. The women who were working the hoisting whim let go, and deceased who was squatting below was struck by one of the rapidly revolving arms of the whim and killed. Inspection and inquiry made.
222	7th July, 12-30 P.M.	Kujama mine, Jharia P. O., Bihar and Orissa.	K. & S. Nanji	Akhali Mallain, (*f.*), 15, *Coal-carrier.*	Coal	Deceased was loading coal in a quarry, 90 feet deep, when a wall on the edge of the quarry collapsed. The debris fell into the quarry, some of it striking deceased. She was killed instantly. Inspection an inquiry made.
223	7th July, 2-P.M.	Selwa mine, Kamptee P .O., Central Provinces.	Central Indian Mining Co, Ld.	Sumi, (*f.*), 16, *Labourer.*	Manganese.	Deceased whilst washing on the edge of a water-logged quarry slipped in and was drowned. Inspection and inquiry made.
224	20th July, 8 A.M.	Purushotampur mine, Pandaveswar P. O., Bengal.	Tata Iron & Steel Co., Ld.	Radhu Baurin, (*f.*), 20, *Labourer.*	Coal	Deceased was carrying on her head a boulder, weighing 118 lbs. She over-balanced and fell backwards. The boulder struck her on the forehead, killing her instantly. Inspection and inquiry made.
225	8th August, 4 P.M.	Kendwadih mine, Katrasgarh P. O., Bihar and Orissa.	Chamanlal Mangallal & Co.	Ali Mohammad, (*m.*), 36, *Labourer.*	Coal	Deceased and six companions were lifting a vertical boiler into place with the aid of a small crab winch. One of the handles broke and as there was neither brake nor pawl the other handle was forced backwards and struck deceased on the head. He died four hours later. Inspection and inquiry made. *(See Report, page 15.)*
226	22nd August, 2-30 P.M.	Teetulmuri mine, Sijua P. O., Bihar and Orissa.	Burrakur Coal Co., Ltd.	Samia Murani, (*f.*), 13, *Labourer.*	Coal	Deceased left her work and went to get a bird's nest built on the top of a standard which supports a three phase transmission line carrying electricity at a pressure of 6600 volts. She climbed up the standard and stood on the return wire, and made contact with one of the live wires above. She was very badly burnt, and died shortly after. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			MISCELLANEOUS ON SURFACE—*concld.*			
	2nd September, 4-30 P.M.	Isabella mine, Nudkhurki P. O., Bihar and Orissa.	Isabella Coal Co.	Durgi Kamin, *(f.)*, 25, *Labourer.*	Coal	Deceased was found drowned in a masonry tank containing water, 7 feet deep. She had been employed in carrying water from the tank. Inspection and inquiry made.
228	27th September, 12 noon.	Lohdongri mine, Ramtek P. O., Central Provinces.	Central Provinces Prospecting Syndicate, Ld.	Bubia Perdhan, *(m.)*, 27, *Labourer.*	Manganese	Deceased whilst bathing in an accumulation of water in a quarry was drowned. Inspection and inquiry made.
229	24th October, 7-30 P.M.	Sudamdih mine, Jharia P. O., Bihar and Orissa.	Sudamdih Coal Co., Ltd.	Ramdhany Singh, (*m.*), 55, *Chowkidar.*	Coal	Deceased apparently missed his way in the dark and fell over the fence into an incline. His injuries were slight but he afterwards died in hospital from dysentery. Inspection and inquiry made.
230	28th October, 6 A.M.	Bhulanbararee mine, Jharia P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ltd.	Sadagar Singh, (*m.*), 37, *Labourer.*	Coal	Deceased for some reason unknown and against all orders, climbed a standard carrying an high tension electrical transmission line. He was electrocuted. Inspection and enquiry made.
231	5th December, 12 noon.	Loyabad mine, Bansjora P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Fatma, (*f.*), 13, *Labourer.*	Coal	Whilst deceased was attempting to remove a scaffolding pole from the wall of a building under construction the wall collapsed, seriously injuring her. She succumbed to her injuries six hours later. Inspection and inquiry made.
232	31st December, 3 P.M.	Taroktan mine, Mogok P. O., Burma.	Burma Ruby Mines, Ld.	Somaria, (*m.*), 20, *Labourer*	Rubies	A gang of coolies after carrying an iron pipe let the pipe fall from their shoulders instead of lowering it down. Deceased, who was one of the gang, fell with the pipe and was fatally injured.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Reason for exclusion.	Cause of accident and remarks.
			DEATHS NOT INCLUDED IN THE STATISTICS—(*37 deaths*).				
1	10th January	Hingunia mine, (Square No. m-14), Kodarma P. O., Bihar and Orissa.	Messrs. Hoare Miller & Co., Ld.	Balia Ghatwarin, (*f.*), 25.	Mica	Not employed	Deceased fell into a disused shaft, 50 feet deep, and was killed. It was presumed that she was at the time engaged in stealing the wooden fencing of the shaft. Inspection and inquiry made.
2	11th January	Salanpur mine, Salanpur P. O., Bengal.	Borrea Coal Company, Ld.	Pano Noonia, (*f.*), 75.	Coal	Not employed	Deceased, whilst drawing water from a well, 125 feet deep, overbalanced and fell into the water. She was drowned. Inspection and inquiry made.
3	18th January, 12-30 P.M.	Mudidih mine, Sijua P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Teju Mullick, (*m.*), 38, *Sirdar.*	Coal	Not a mining accident.	Deceased went over the walling of a disused incline entrance to bathe, and was drowned in a depth of 15 feet of water. Inspection and inquiry made.
4	24th January, 12 A.M.	South Kujama mine, Jharia P. O., Bihar and Orissa.	Bagdigi Kujama Collieries, Ld.	Ramtahal, (*m.*), 1.	Coal	Not employed	Deceased had been placed near a surface tram line and had crawled up to the line unnoticed by any one. He was struck on the head by a passing tub and killed instantly. Inspection and inquiry made.
5	11th February, 11-30 A.M.	Sutikdih mine, Bhujudih P. O., Bihar and Orissa.	Sutikdih Coal Co., Ld.	Sombari Monda, (*f.*), 1½.	Coal	Not employed	Deceased wandered on to a surface tram line. She was run over and killed by a loaded tub which was being pushed by two men. Inspection and inquiry made.
6	20th February, 2 P.M.	Sendra mine, Bansjora P. O., Bihar and Orissa.	Sendra Coal Co., Ld.	Badamia Chamarin, (*f.*), 24, *Labourer.*	Coal	Not a mining accident.	Deceased, whilst washing dishes in a masonry bathing tank, slipped in and was drowned. Inspection and inquiry made.
7	23rd February, 3-15 P.M.	Bokaro mine, Bokaro P. O., Bihar and Orissa.	East Indian Railway and Bengal Nagpur Railway.	Montora Dhobin, (*f.*), 65.	Coal	Not employed	Deceased was an old woman and partially blind. While she was crossing a surface tram line she tripped over the haulage rope and fell. She was run over and received injuries from which she died 12 hours later. Inspection and inquiry made.
8	24th February, 5-30 P.M.	Kharkhari and Mohespur mine, Katrasgarh P. O., Bihar and Orissa.	Kharkhari Collieries, Ld.	Bipni Beldarin, (*f.*), 6.	Coal	Not employed	Deceased, in attempting to cross a surface tram line, was knocked down by a loaded tub which was being pushed to the loading depot. She received injuries to the leg and died from blood poisoning eleven days later. Inspection and inquiry made.
9	7th March, 9 P.M.	Mudidih mine, Sijua P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Anich Goala, (*m.*), 32, *Brick maker.*	Coal	Not a mining accident.	Deceased went to sleep in a grass hut in which a fire was burning. The hut caught fire and he was burnt to death. Inspection and inquiry made.
10	Not known	Srikristopur mine, Kalipahari P. O., Bengal.	Messrs. Balliram & Co.	Ganga Majhee, (*m.*), 50.	Coal	Not employed	Deceased was found drowned in a sinking shaft, 42 feet deep. He was said to have been mentally defective. Inspection and inquiry made.

Fatal Accidents, 1921—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Reason for exclusion.	Cause of accident and remarks.
		DEATHS NOT INCLUDED IN THE STATISTICS—*contd.*					
11	20th March, 9 A.M.	Saudi mine, Samdih P. O., Bengal.	B. Hazra & Co.	Dugai Manjhi, (*m.*), 45.	Coal	Not employed	Deceased went into an abandoned quarry and begant to cut coal for his own use and for sale. A mass of earth, 4′ 6″×3′×9″ weighing about 13 cwt., fell upon him from the side. He sustained injuries from which he died almost immediately. Inspection and inquiry made.
12	21st March, 4 A.M.	New Kessurgarh mine, Nowagarh P. O., Bihar and Orissa.	New Kessurgarh Coal Co., Ld.	Karmee Bhuiya, (*f.*), 45. *Labourer.*	Coal	Not a mining accident.	Deceased was found drowned in a well. The well was properly fenced. Inspection and inquiry made.
13	28th March, 5 A.M	Isabella mine, Nudkhurkhi P. O., Bihar and Orissa.	Isabella Coal Co.	Sugea Kurmi, (*f.*), 25, *Coal-carrier.*	Coal	Not a mining accident.	While deceased was sleeping in a hut an oil lamp overturned and set fire to her clothes. She died from her injuries ten days' later. Inspection and inquiry made.
14	20th April, 4 P.M.	Ghugus (Nos. 2 and 3 Pits) mine, Chanda P. O., Central Provinces.	Rai Bahadur Bissesardas Daga and Sir M. B. Dadabhoy.	Ram Pochu, (*f.*), 12, *Labourer.*	Coal	Not a mining accident.	Whilst assisting in hand shunting a railway wagon deceased was run over and killed. Inspection and inquiry made.
15	25th April, 2 A.M	Kendwadih mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Gansha Kahar, (*m.*), 22, *Labourer.*	Coal	Not a mining accident.	Deceased attempted to sprag a railway wagon which was being hand-shunted. He was caught by the sprag and thrown down, being killed instantly. Inspection and inquiry made.
16	6th May. 4-30 P.M.	Pretoria mine, Charanpur P. O., Bengal.	Seebpore Coal Co., Ld.	Chand Moni, (*f.*), 1½.	Coal	Not employed.	Deceased crawled on to a pit bank unobserved. She was struck by an empty tub, and fell on to her head, sustaining injuries from which she died shortly afterwards. Inspection and inquiry made.
17	13th May, 12-30 P.M.	Parbelia mine, Dishergarh P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Munger Roy, (*m.*), 28, *Sinker.*	Coal	Not a mining accident.	Deceased was found drowned in a boiler feed tank. The tank was properly fenced. Inspection and inquiry made.
18	18th May, 5-30 P.M.	Bahajipani mine, Pench P. O., Central Provinces.	Pench River Coal Co., Ld.	Sukdass Punka, (*m.*), 11.	Coal	Not employed	Deceased accompanied his father who was employed in driving a gallery, 9 feet wide, in a coal seam 5′ 6″ thick. A fall of roof, 13′ ×3′×1′ thick, occurred without warning. Deceased was struck by the fall and killed instantly. Inspection and inquiry made.
19	24th May, 3-30 P.M.	Phularitand mine, Katrasgarh P. O., Bihar and Orissa.	Phularitand Coal Co., Ld.	Karu Rajwar, (*m.*), 40, *Labourer.*	Coal	Not a mining accident.	Deceased with other coolies was pushing an empty coal wagon into position for loading on a railway siding. Whilst so engaged he slipped and fell, striking his head violently on the ground and sustaining a fracture of the skull. He died two days later. Inspection and inquiry made.

20	14th June, between 7 and 11-30 P.M.	Samla mine, Pandaveswar P. O., Bengal.	Samla-Kendra Collieries, Ld.	Mowri Dassi, (*f.*), 13.	Coal	Not employed	Deceased was run over by a train of tubs drawn by a locomotive. She received injuries from which she died within a few hours. Inspection and inquiry made.
21	17th June, 11 A.M.	Bokaro mine, Bokaro P. O., Bihar and Orissa.	East Indian and Bengal-Nagpur Railway Company.	Jhori Beldarin, (*f.*), 5.	Coal	Not employed	Deceased was found drowned in a quarry in an accumulation of water, 3 feet deep. Inspection and inquiry made.
22	12th July, 12-30 P.M.	Lachipur mine, Sitarampur P. O., Bengal.	Jalota Lachipur Coal Co.	Unknown, (*f.*), 35.	Coal	Not employed	The body of an unknown woman was found floating in the water of a disused shaft. Inspection and inquiry made.
23	17th July, 9 A.M.	Manaigion mine, Ramtek P. O., Central Provinces.	Central India Mining Co., Ld.	Mani Kisan, (*f.*), 15, *Labourer.*	Manganese.	Not a mining accident.	Deceased whilst taking water from a water-logged quarry slipped in and was drowned.
24	24th July, 10 A.M.	Jharia Khas (Angarpathra) mine, Katrasgarh P. O., Bihar and Orissa.	Trigunait Bros.	Makhawa Bhuiyan, (*f.*), 15, *Coal-carrier.*	Coal	Not a mining accident.	Deceased, whilst taking water from a well, overbalanced, fell into the water and was drowned. Inspection and inquiry made.
25	1st August, 2-30 P.M.	Barmondia mine, Sitarampur P. O., Bengal.	New Beerbhum Coal Co., Ld.	Charu Baurin, (*f.*), 9.	Coal	Not employed	Deceased was run over by a tub on a surface tram line. She was killed instantly. Inspection and inquiry made.
26	12th August, 10-30 A.M.	Chanda mine, Jharia P. O., Bihar and Orissa.	R. A. Mucadum & Sons	Pagla Gowalin, (*f.*), 10.	Coal	Not employed	Deceased while bathing had a fit and was drowned. Inspection and inquiry made.
27	13th August, 1-50 P.M.	Serampur mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Co.	Manku Dhobi, (*m.*), 35, *Shunter.*	Coal	Not a mining accident.	While stepping out from between two sets of railway wagons which he had failed to couple deceased was knocked down and run over. He was killed instantly. Inspection and inquiry made.
28	11th September, about mid-night.	Ramjibanpur mine, Sitarampur P. O., Bengal.	Ramjibanpur Coal Co.	Chandra Bauri, (*m.*), 40.	Coal	Not employed	The body of deceased was found at the bottom of a shaft, 52 feet deep. The shaft was fenced, and it was presumed that he had jumped into the shaft. Inspection and inquiry made.
29	16th September, 4-30 P.M.	Hteinthitchaung mine, Hteinthit P. O., Burma.	Burma Finance and Mining Co., Ltd.	Benbadur, (*m.*), 27, *Labourer.*	Wolfram and Tin.	Not a mining accident.	Deceased sustained fatal injuries through the fall of a tree near an open excavation.
30	25th September,	Jinagora mine, Jharia P. O., Bihar and Orissa.	G. D. Trikumji.	Panchia Mulla, (*f.*), 25, *Coal carrier.*	Coal	Not a mining accident.	Deceased was found drowned in a water-logged quarry, who was subject to hysterical fits. Inspection and inquiry made.
31	1st October, 7-30 P.M.	Central Kenda mine, Toposi P. O., Bengal.	Baijnath Ram Kumar Marwari.	Sewnath Singh, (*m.*), 12.	Coal	Not employed	Deceased, whilst assisting two coal cutters to make gunpowder cartridges, brought a light near to the explosive and caused an explosion. He sustained serious burns to which he succumbed a few hours later. The two coal cutters were slightly burnt. Inspection and inquiry made.
32	6th October, 1 P.M.	Jogta mine, Sijua P. O., Bihar and Orissa.	Messrs. Agabeg Brothers	Budhin Chamarin, (*f.*), 12, *Bailer.*	Coal	Not a mining accident.	Deceased was found drowned in a shallow bathing tank. Inspection and inquiry made.

Fatal Accidents, 1921—*concld.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Reason for exclusion.	Cause of accident and remarks.
			DEATHS NOT INCLUDED IN THE STATISTICS—*concld.*				
33	3rd October, 12 Noon.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ltd.	Law Yin, (*m.*), 28, *Dump Picker.*	Wolfram and Tin.	Not a mining accident.	Deceased was killed by a falling tree.
34	18th October, 12-30 P.M.	Devada mine, Chipurupalle P. O., Madras.	Vizianagram Mining Co., Ltd.	Karanam Bangary, (*m.*), 25, *Labourer.*	Manganese.	Not a mining accident.	Deceased was found drowned in a water-logged part of a quarry.
35	25th October, 2 A.M.	Sodepur (Outcrop) mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ltd.	Badhy Barhi. (*m.*), 40, *Carpenter.*	Coal .	Not a mining accident.	Deceased, against orders, lifted the brake in front of a wagon containing timber, which was being unloaded on a colliery siding. The wagon moved forward and one of the wheels passed over deceased's left leg. He died fifteen days later from shock. Inspection and inquiry made.
36	Not known	Jogta mine, Sijua P. O., Bihar and Orissa.	Messrs. Agabeg Bros.	Japlal Tali, (*m.*), 10.	Coal .	Not employed	Deceased was found drowned in a shallow bathing tank. Inspection and inquiry made.
37	24th December, 2 P.M.	Bhowra mine, Jamadoba P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Jamuni Mullick, (*f.*), 7.	Coal .	Not employed	Deceased whilst playing in a shallow quarry, was killed instantly by a fall of stone from a height of 7 feet. Inspection and inquiry made.

APPENDIX II.

Table No. 2.

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1921.

Province	District and mineral field	Total average number of persons employed daily.	FATAL ACCIDENTS. Number of separate fatal accidents.	FATAL ACCIDENTS. Number of deaths. Below ground.	FATAL ACCIDENTS. Number of deaths. Above ground.	FATAL ACCIDENTS. Number of deaths. Total deaths.	SERIOUS ACCIDENTS. Number of serious non-fatal accidents.	SERIOUS ACCIDENTS. Number of persons seriously injured. Below ground.	SERIOUS ACCIDENTS. Number of persons seriously injured. Above ground.	SERIOUS ACCIDENTS. Number of persons seriously injured. Total number of persons injured.	Death-rate per 1,000 persons employed. Below ground.	Death-rate per 1,000 persons employed. Above ground.	Death-rate per 1,000 persons employed. Below and above ground.
					A.—COAL.								
Assam	Lakhimpur	2,848	14	15	...	15	76	71	7	78	7·77	..	5·27
	Naga Hills	510	1	1	...	1	1	...	1	1	4·44	...	1·96
	TOTAL	3,358	15	16	...	16	77	71	8	79	7·42	...	4·76
Baluchistan	Sibi, Khost	971	7	8	...	8	1	1	...	1	14·21	...	8·24
	Quetta-Pishin	168	1	1	...	1	...	...	...	...	8·47	...	5·95
	TOTAL	1,139	8	9	...	9	1	1	...	1	13·22	...	7·90
Bengal	Bankura, Raniganj	111	...	...	...	...	...	...	...	...	...	...	...
	Birbhum ,,	387	...	...	...	...	...	...	...	...	...	...	...
	Burdwan ,,	45,315	42	45	3	48	40	32	10	42	1·78	0·15	1·06
	TOTAL	45,813	42	45	3	48	40	32	10	42	1·76	0·15	1·05
Bihar and Orissa	Hazaribagh: Bokaro-Ramgarh	11,337	2	2	..	2	3	...	3	3	0·27	...	0·18
	Hazaribagh: Giridih	9,421	5	6	...	6	18	16	2	18	0·94	...	0·64
	Hazaribagh: Jharia	1,844	3	2	1	3	2	1	1	2	2·22	1·06	1·63
	Manbhum: Jharia	89,188	90	123	11	134	70	55	20	75	2·49	0·18	1·50
	Manbhum: Raniganj	11,201	10	14	..	14	7	6	1	7	2·36	...	1·25
	Palamau, Daltonganj	288	2	2	...	2	...	.	...	...	11·98	...	6·94
	Sambalpur, Hingir-Rampur	675	...	...	...	...	1	...	1	1	...	...	...
	Santhal Parganas: Jainty	1,248	1	1	...	1	...	...	...	...	1·56	...	0·80
	Santhal Parganas: Raniganj	815	1	1	...	1	...	...	...	...	1·19	...	1·23
	TOTAL	126,017	114	151	12	163	101	78	28	106	2·12	0·22	1·21
Burma	Southern Shan States	270	1	1	...	1	...	...	..	.	15·87	...	3·70
Central Provinces	Betul	81	...	...	...	...	...	...	...	...	...	...	...
	Chanda, Ballarpur	2,182	6	5	1	6	10	8	3	11	3·59	1·41	2·75
	Chhindwara, Pench Valley	7,801	8	7	4	11	14	12	2	14	1·34	1·55	1·41
	Narsinghpur, Mohpani	2,006	1	1	...	1	16	12	4	16	0·79	...	0·50
	Yeotmal	82	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	12,152	15	13	5	18	40	32	9	41	1·62	1·21	1·48
Panjab	Jhelum	1,613	1	1	...	1	7	5	2	7	0·98	...	0·62
	Mianwali	167	...	...	...	...	2	...	2	2	...	...	...
	Shahpur	118	1	1	...	1	...	...	...	...	18·87	...	8·47
	TOTAL	1,898	2	2	...	2	9	5	4	9	1·72	...	1·05
	GRAND TOTAL (COAL)	190,647	197	237	20	257	268	219	59	278	2·18	0·24	1·35

APPENDIX II—*contd.*

Table No. 2—*contd.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1921—*contd.*

Provinces.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				DEATH-RATE PER 1,000 PERSONS EMPLOYED.		
			Number of separate fatal accidents.	Number of deaths.			Number of serious non-fatal accidents.	Number of persons seriously injured.					
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
						B.—MICA.							
Bihar and Orissa	Gaya	1,659	...	...	...	...	1	1	...	1	...	...	...
	Hazaribagh	10,691	4	5	...	5	5	14	...	14	0·77	...	0·47
	Manbhum	8	...	...	...	...	...	...	...	...	...	...	...
	Monghyr	282	...	...	...	...	...	...	...	...	...	...	...
	Sambalpur	90	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	12,730	4	5	...	5	6	15	...	15	0·05	...	0·39
Central Provinces	Balaghat	5	...	...	...	...	...	...	...	...	...	...	...
Madras	Kistna	7	...	...	...	...	...	...	...	...	...	...	...
	Nellore	2,920	...	...	...	...	...	...	...	...	...	...	...
	Nilgiris	25	...	...	...	...	...	...	...	...	...	...	...
	Salem	48	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	3,000	...	...	...	...	...	...	...	...	...	...	...
Rajputana	Ajmer-Merwara	808	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (MICA)	16,543	4	5	...	5	6	15	...	15	0·48	...	0·30
						C.—MANGANESE ORE.							
Bombay	Panch Mahals	1,821	...	...	...	...	7	1	6	7	...	...	...
Central Provinces	Balaghat	6,267	2	...	2	2	...	...	...	...	..	1·27	0·32
	Bhandara	1,150	...	...	...	...	...	...	...	...	...	...	...
	Chhindwara	1,357	...	...	...	...	4	4	...	4	..	...	...
	Nagpur	5,407	2	1	1	2	5	1	4	5	0·24	0·77	0·37
	TOTAL	14,201	4	1	3	4	7	5	4	9	0·07	0·83	0·28
Madras	Vizagapatam	1,235	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (MANGANESE)	17,327	4	1	3	4	14	6	10	16	0·07	0·71	0·23
						D.—LIMESTONE.							
Burma	Northern Shan States	36	...	...	...	...	...	...	...	...	...	...	...
Central Provinces	Bilaspur	308	...	...	...	...	...	...	...	...	...	...	...
	Jabalpur, katni	6,235	2	2	...	2	2	1	1	2	0·42	...	0·32
	TOTAL	6,543	2	2	...	2	2	1	1	2	0·41	...	0·31
Panjab	Hoshiarpur	30	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (LIMESTONE)	6,609	2	2	...	2	2	1	1	2	0·40	...	0·30

APPENDIX II—*contd.*

Table No. 2—*contd.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1921—*contd.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				Death-rate per 1,000 persons employed.		
			Number of separate fatal accidents.	Number of deaths. Below ground.	Above ground.	Total deaths.	Number of serious non-fatal accidents.	Number of persons seriously injured. Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
		E.—SALT.											
Panjab	Jhelum	827	...	...	...	...	2	2	...	2	...	...	...
	Mianwali	76	...	...	...	...	...	...	...	...	...	...	...
	Shahpur	62	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Salt)	965	...	...	...	...	2	2	...	2	...	...	...
		F.—GEMS.											
Burma	Katha Mogok (Rubies, etc.)	1,242	2	1	1	2	5	...	5	5	1·28	2·18	1·61
Rajputana	Ajmer (Beryl)	11	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Gems)	1,253	2	1	1	2	5	...	5	5	1·26	2·18	1·60
		G.—SLATE.											
Bihar and Orissa	Monghyr	473	...	...	...	...	2	...	2	2	...	...	...
Panjab	Gurgaon	221	...	...	...	...	...	...	...	...	...	...	...
	Kangra	154	...	...	...	...	...	...	...	...	...	...	...
	Total	375	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Slate)	848	...	...	...	...	2	...	2	2	...	...	...
		H.—GOLD.											
Bihar and Orissa	Singhbhum	13	...	...	...	...	...	...	...	...	...	...	...
Madras	Anantapur	535	1	1	...	1	1	...	1	1	9·90	...	1·87
	GRAND TOTAL (Gold)	548	1	1	...	1	1	...	1	1	9·90	...	1·82
		I.—IRON ORE.											
Bihar and Orissa	Singhbhum	2,280	...	...	...	...	...	...	...	...	...	...	...
Burma	Mandalay	183	...	...	...	...	...	...	...	...	...	...	...
	Northern Shan States	587	1	1	...	1	1	1	...	1	3·77	...	1·70
	Total	770	1	1	...	1	1	1	...	1	2·36	...	1·30
Rajputana	Ajmer-Merwara	30	...	...	...	...	1	...	1	1	...	...	...
	GRAND TOTAL (Iron Ore)	3,080	1	1	...	1	2	1	1	2	0·51	...	0·32

APPENDIX II—*contd.*

Table No. 2—*contd.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1921—*contd.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				Death-rate per 1,000 persons employed.		
			Number of separate fatal accidents.	Number of deaths. Below ground.	Above ground.	Total deaths.	Number of serious non-fatal accidents.	Number of persons seriously injured. Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
		J.—WOLFRAM.											
Burma	Mergui	50	...	...	...	...	...	...	...	...	...	...	...
	Tavoy	1,994	7	7	...	7	9	5	4	9	4·20	...	3·51
	Total	2,044	7	7	...	7	9	5	4	9	4·10	...	3·42
	GRAND TOTAL (Wolfram).	2,044	7	7	...	7	9	5	4	9	4·10	...	3·42
		K.—MOLYBDENITE.											
Burma	Tavoy	8	...	...	...	...	...	...	...	...	...	...	...
		L.—MAGNESITE.											
Madras	Salem	939	...	...	...	...	2	...	2	2	...	...	...
		M.—CHROMITE.											
Baluchistan	Zhob	453	...	...	...	...	1	1	...	1	...	...	...
Bihar and Orissa	Singhbhum	305	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Chromite)	758	...	...	...	...	1	1	...	1	...	...	...
		N.—COPPER ORE.											
Bihar and Orissa	Singhbhum	2,837	5	4	1	5	5	...	5	5	5·63	0·47	1·76
Central Provinces	Balaghat	46	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Copper Ore) for 1921.	2,883	5	4	1	5	5	...	5	5	5·42	0·47	1·73
		O.—BAUXITE.											
Bombay	Kaira	221	...	...	...	...	...	...	...	...	...	...	...
		P.—CLAY.											
Bihar and Orissa	Bhaghalpur	121	...	...	...	...	...	...	...	...	...	...	...
	Manbhum	70	...	...	...	...	...	...	...	...	...	...	...
	Palamau	386	...	...	...	...	...	...	...	...	...	...	...
	Total	577	...	...	...	...	...	...	...	...	...	...	...
Central Provinces	Jabalpur	857	...	...	...	...	...	...	...	...	...	...	...
Delhi	Delhi	84	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Clay)	1,518	...	...	...	...	...	...	...	...	...	...	...

APPENDIX II—*contd.*

Table No. 2—*concld.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1921—*concld.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS. Number of separate fatal accidents.	FATAL ACCIDENTS. Number of deaths. Below ground.	FATAL ACCIDENTS. Number of deaths. Above ground.	FATAL ACCIDENTS. Number of deaths. Total deaths.	SERIOUS ACCIDENTS. Number of serious non-fatal accidents.	SERIOUS ACCIDENTS. Number of persons seriously injured. Below ground	SERIOUS ACCIDENTS. Number of persons seriously injured. Above ground.	SERIOUS ACCIDENTS. Number of persons seriously injured. Total number of persons injured.	Death-rate per 1,000 persons employed. Below ground.	Death-rate per 1,000 persons employed. Above ground.	Death-rate per 1,000 persons employed. Below and above ground.
		Q.—LEAD ORE.											
Burma	Northern Shan States	1,420	5	4	1	5	7	5	2	7	4·03	2·34	3·52
Central Provinces	Drug	34	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Lead Ore)	1,454	5	4	1	5	7	5	2	7	3·96	2·25	3·44
		R.—TIN.											
Bihar and Orissa	Hazaribagh	18	...	...	...	...	...	...	...	...	...	...	...
Burma	Meegui (Maliwan)	673	4	4	...	4	...	...	...	...	8·97	...	5·96
	Tavoy	915	...	...	...	...	1	...	1	1	...	...	...
	Thaton	9	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Tin Ore)	1,613	4	4	...	4	1	...	1	1	4·69	...	2·48
		S.—STEATITE.											
Bihar and Orissa	Bhagalpur	14	...	...	...	...	...	...	...	...	...	...	...
Central Provinces	Jabalpur	217	...	...	...	...	1	1	...	1	...	...	...
Madras	Kurnool	15	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Steatite)	246	...	...	...	...	1	1	...	1	...	...	...
		T.—APATITE.											
Bihar and Orissa	Singhbhum	40	...	...	..	...	...	...	...	...	...	...	...
		U.—BARYTES.											
Madras	Kurnool	27	...	...	...	...	...	...	...	...	...	...	...
		V.—OCHRE.											
Central Provinces	Chanda	33	...	...	...	...	...	...	...	...	...	...	...
		W.—CALCITE.											
Bihar and Orissa	Bhagalpur	8	...	...	...	...	...	...	...	...	...	...	...
		X.—GRAPHITE.											
Bihar and Orissa	Bhagalpur	40	...	...	...	...	...	...	...	...	...	...	...
Central Provinces	Betul	11	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (Graphite)	51	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (All Minerals)	249,663	232	267	26	293	328	262	87	349	1·72	0·26	1·17

APPENDIX II—*contd.*

Table No. 3.

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1921, classified according to the age and sex of the workers.

Mineral.	Province and mineral field.	Number of separate fatal accidents.	Number of deaths.								Total below and above ground.
			Below ground.				Above ground.				
			Adult males.	Adult females.	Children (under 13).	Total.	Adult males.	Adult females.	Children (under 13).	Total.	
Coal	Assam, Lakhimpur	14	15	...	...	15	...	...	...	...	15
	Naga Hills	1	1	...	...	1	...	...	...	...	1
	Total Assam	15	16	...	...	16	...	...	...	...	16
	Baluchistan — Sibi Khost	7	8	...	...	8	...	...	...	...	8
	Baluchistan — Quetta-Pishin	1	1	...	...	1	..	...	...	...	1
	Total Baluchistan	8	9	...	...	9	...	...	...	...	9
	Bengal, Burdwan, Raniganj	42	38	7	...	45	2	1	...	3	48
	Bihar and Orissa — Hazaribagh — Bokaro	2	2	...	...	2	...	...	...	...	2
	Bihar and Orissa — Hazaribagh — Ramgarh	5	5	1	...	6	.	...	..	...	6
	Bihar and Orissa — Hazaribagh — Giridih	3	2	...	..	2	1	...	...	1	3
	Bihar and Orissa — Manbhum, Jharia	90	90	33	...	123	7	4	...	11	134
	Bihar and Orissa — Manbhum, Raniganj	10	12	2	...	14	...	...	...	...	14
	Bihar and Orissa — Palamau, Daltonganj	2	2	...	...	2	...	...	...	...	2
	Bihar and Orissa — Sonthal Parganas — Jainty	1	...	1	...	1	...	...	...	...	1
	Bihar and Orissa — Sonthal Parganas — Raniganj	1	1	...	..	1	...	...	...	...	1
	Total Bihar and Orissa	114	114	37	...	151	8	4	...	12	163
	Burma, Southern Shan States	1	1	...	...	1	...	...	...	...	1
	Central Provinces — Chanda	6	4	1	...	5	1	...	...	1	6
	Central Provinces — Chhindwara	8	6	1	...	7	4	...	...	4	11
	Central Provinces — Narsinghpur	1	1	...	...	1	...	...	...	...	1
	Total Central Provinces	15	11	2	...	13	5	...	...	5	18
	Panjab — Jhelum	1	1	...	...	1	...	...	...	...	1
	Panjab — Shahpur	1	1	...	..	1	...	...	...	...	1
	Total Panjab	2	2	...	...	2	...	...	...	...	2
	Total Coal	197	191	46	...	237	15	5		20	257

APPENDIX II—*contd.*

Table No. 3—*concld.*

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1921, classified according to the age and sex of the workers—*concld.*

Mineral	Province and mineral field.	Number of separate fatal accidents.	Number of deaths.								Total below and above ground.
			Below ground.				Above ground.				
			Adult males.	Adult females.	Children (under 13).	Total.	Adult males.	Adult females.	Children (under 13).	Total.	
Mica	Bihar and Orissa, Hazaribagh	4	3	2	...	5	...	...	...	...	
Manganese	Central Provinces, Balaghat	2	...	...	...	...	...	2	...	2	2
	Central Provinces, Nagpur	2	1	...	...	1	1	...	...	1	2
	Total Manganese	4	1	...	...	1	1	2	...	3	4
Limestone	Central Provinces, Jabalpur	2	1	1	...	2	...	...	...	..	2
Lead Ore	Burma, Northern Shan States	5	4	...	...	4	1	...	..	1	5
Gold	Madras, Anantapur	1	1	...	...	1	...	...	...	...	1
Iron Ore	Burma, Northern Shan States	1	1	...	...	1	...	...	...	...	1
Wolfram	Burma, Tavoy	7	7	...	...	7	...	...	...	..	7
Gems (Rubies)	Burma, Katha, Mogok	2	1	...	...	1	1	...	...	1	2
Copper	Bihar and Orissa, Singhbhum	5	4	...	...	4	...	1	...	1	5
Tin	Burma, Mergui	4	4	...	...	4	...	...	...	...	4
GRAND TOTAL (ALL MINERALS)		232	218	49	...	267	18	8	...	26	296

APPENDIX II—*concld.*

Table No. 4.

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1921, classified according to cause of accident.

Mineral worked.	Number of separate fatal accidents.	Number of persons killed.											Death-rate per 1,000 persons employed.		
		Explosions of fire-damp.	Falls of roof.	Falls of side.	In shafts.	Suffocation by gases.	By explosives.	Irruptions of water or falling into water.	Haulage.	Miscellaneous below ground.	Surface.	Total deaths.	Below ground.	Above ground.	Below and above ground.
Coal	197	15	75	75	18	...	18	...	32	10	14	257	2·18	0·24	1·35
Lead Ore	5	...	1	1	...	...	...	...	...	2	1	5	3·96	2·25	3·44
Gold	1	...	...	...	1	...	...	...	...	...	...	1	9·90	...	1·82
Iron Ore	1	...	...	1	...	...	...	...	...	...	...	1	0·51	...	0·32
Limestone	2	...	...	2	...	...	...	...	...	...	...	2	0·40	...	0·30
Manganese Ore	4	...	...	1	...	...	...	...	...	...	3	4	0·07	0·71	0·23
Mica	4	...	...	3	...	...	2	...	...	...	...	5	0·48	...	0·30
Gems (Rubies)	2	...	...	1	...	...	...	...	...	...	1	2	1·26	2·18	1·60
Tin Ore	4	...	...	4	...	...	...	...	...	...	...	4	4·69	...	2·48
Wolfram	7	...	5	2	...	...	...	...	...	...	...	7	4·10	...	3·42
Copper Ore	5	...	...	1	3	...	...	...	...	...	1	5	5·42	0·47	1·73
Total 1921	232	15	81	91	22	...	20	...	32	12	20	293	1·72	0·26	1·17
Total preceding year.	177	5	48	40	44	8	12	8	16	11	33	225	1·33	0·40	0·96
Difference	+55	+10	+33	+51	−22	−8	+8	−8	+16	+1	−13	+68	+0·39	−0·14	+0·21

APPENDIX III.

PROSECUTIONS UNDER THE INDIAN MINES ACT, 1901.

Statement of prosecutions instituted under the Indian Mines Act, 1901, during the year 1921.

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number convicted.	Numbers of rules and sections of the Act contravened.	Remarks.
Bihar and Orissa	Bokaro-Ramgarh.	1	2	...	Section 20, Rule 3 of Notification No. 864-68—20, dated 10th March 1904.	*Withdrawn.*
	Giridih	1	3	1	Section 20, Rules 1, 3 and 4 of Notification No. 864-68—20, dated 10th March 1904.	
	Hazaribagh	2	1	1	Section 20, Rule 1 of Notification No. 11793—103, dated 30th December 1908, as amended by Notification No. 5072—113, dated 1st July 1916.	
	Do.	1	1	...		*Accused absconded.*
	Do.	1	2	2		
	Do.	1	1	1		
	Do.	1	1	1		
	Do.	1	1	1		
	Do.	1	1	1		
	Manbhum	1	1	1		
	Do.	1	1	1		
	Do.	4	1	1		
	Do.	1	2	2	Section 20, Rules 1, 7 and 19 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	2	2	Section 20, Rule 12 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	1	1		
	Do.	1	1	1	Section 20, Rule 3 of Bihar and Orissa Government Notification No. 11761-M., dated 23rd August 1918.	
	Do.	1	5	2	Section 20, Rule 3 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	1	1		
	Do.	1	4	4		
	Do.	1	3	3		
	Do.	1	2	2	Section 20, Rules 3 and 19 of Notification No. 864-68—20, dated 10th March 1904, and Section 21, Special Rule 22.	
	Do.	1	1	...	Section 16	*Acquitted.*
	Do.	1	1	...		
	Do.	1	2	2	Section 20, Rule 19 of Notification No. 864-68—20, dated 10th March 1904.	*Acquitted.*
	Do.	1	1	...	Section 21, Special Rules 5, 77 and 78	*Accused absconded.*
	Do.	1	1	...	„ „ „ Rule 21 . .	*Accused absconded.*
	Do.	1	2		„ „ „ Rules 5 and 13 .	*Accused absconded.*
	Do.	1	3	3	„ „ „ „ 5, 7 and 15	
	Sonthal Parganas.	1	1	...	„ „ „ Rule 78 . .	*Accused absconded.*

APPENDIX III—*concld.*

PROSECUTIONS UNDER THE INDIAN MINES ACT, 1901—*concld.*

Statement of prosecutions instituted under the Indian Mines Act, 1901, during the year 1921—*concld.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number convicted.	Numbers of rules and sections of the Act contravened.	Remarks.
Bengal	Burdwan	1	2	1	Section 20, Rules 1 and 20 of Notification No. 864-68—20, dated 10th March 1904, and Rule 3 of Government of Bengal Notification No. 3970-Com., dated 28th August 1918.	
	Do.	1	2	2	Section 20, Rules 2 (*g*) and 4 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	2	2	Section 20, Rules 2 (*g*), 4 and 20 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	1	1	Section 20, Rules 3, 4 and 19 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	2	2		
	Do.	1	3	1	Section 20, Rule 8 of Notification No. 11793—103, dated 30th December 1908, and Rule 4 of Notification No. 864-68—20, dated 10th March 1904 and Section 21, Special Rule 37.	
	Do.	1	2	1	Section 20, Rule 19 of Notification No. 864-68—20, dated 10th March 1904.	
	Do.	1	1	1	Section 20, Rule 1 of Notification No. 11793—103, dated 30th December 1908, as amended by Notification No. 5072—113, dated 1st July 1916.	
	Do.	1	1	...	Section 21, Special Rule 4 . . .	*Accused absconded.*
	Do.	1	2	...	„ „ „ Rules 4 and 5 . .	*One accused absconded, the other was acquitted.*
	Do.	1	2	...	„ „ „ „ 4, 5, 8 and 85	*Accused absconded.*
	Do.	1	1	...	„ „ „ Rule 5 . . .	*Acquitted.*
	Do.	1	1	1	„ „ „ „ 5.	

APPENDIX IV.

MISCELLANEOUS.

Statement No. 1.

List of Inspection Circles.

No. 1 Circle.	No. 2 Circle.
1. All mines in Bihar and Orissa except mines in the district of the Santhal Parganas and such mines in the district of Manbhum as lie west of a line drawn from mile 175 on the Bengal Nagpur Railway to mile 169 on the Grand Trunk Road and continued in a straight line across the district.	1. All mines in Bengal.
2. All mines in Baluchistan.	2. Such mines in Bihar and Orissa as lie in the district of the Santhal Parganas and in the district of Manbhum east of a line drawn from mile 175 on the Bengal Nagpur Railway to mile 169 on the Grand Trunk Road and continued in a straight line across the district.
3. All mines in the North-West Frontier Province.	3. All mines in Bombay.
4. All mines in the Panjab.	4. All mines in the Central Provinces.
5. All mines in Rajputana.	5. All mines in Madras.
6. All mines in Assam.	6. All mines in Burma.

Statement No. 2.

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1921.

(a) Certificates granted to holders of English certificates of competency.

FIRST CLASS.

NAME.	No. of Indian certificate.	Date of Indian certificate.	No. of English certificate.	Date of English certificate.
Morrell, Bert	260	7th January 1921	678	30th July 1919.
Bartley, William	261	Ditto	506	26th July 1918.
Sellers, Douglas	262	Ditto	3,632	9th June 1910.
Millar, Leander	263	Ditto	221	22nd July 1915.
Walters, Cyril Vernon	264	Ditto	107	2nd February 1914.
Farrer, John Richard	265	Ditto	3,038	20th August 1907.
Crawford, Robert White	266	Ditto	2,984	14th June 1907.
Davies, David John	267	Ditto	77	2nd February 1914.
Atkinson, Cecil Arthur	268	18th January 1921	2,898	7th January 1907.
Allan, John Donaldson Blair	269	14th February 1921	578	27th January 1919.
Bell, Joseph	270	Ditto	631	30th July 1919.
Easson, John	271	Ditto	245	26th January 1916.
Wetherell, Thomas Augustus	272	23rd December 1921	702	30th July 1919.
Clubb, Alexander	273	Ditto	3,583	9th June 1910.
Liddell, Henry Norman	274	Ditto	4,050	10th June 1912.
Orr, Archibald	275	Ditto	683	30th July 1919.
Lewis, Robert McLellan	276	Ditto	744	22nd January 1920.
Lorimer, William Wallace	277	Ditto	601	27th January 1919.
Wood, Robert	278	Ditto	854	11th August 1920.
Fisher, Charles Frank	279	Ditto	2,367	13th May 1904.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 2—*contd.*

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1921—*contd.*

(*b*) Certificates of competency.

FIRST CLASS.

NAME.	No. of certificate.	Date of certificate.	REMARKS.
Campbell, James Brown	121	31st March 1921.	
Adamson, Cecil	122	Ditto.	
Hyde, George William Albert	123	Ditto.	
Connolly, William John	124	Ditto.	
Kitchen, Phillip H.	125	Ditto.	
Aukim, Burton E.	126	Ditto.	
Hogg, James Sneddon	127	Ditto.	
Banerji, Bejoy Krishna	128	Ditto.	
Black, Henry	129	Ditto.	
Durham, Vivian Clyde	130	Ditto.	
Sheehan, Frederic George	131	Ditto.	
Chatterji, Nritya Gopal	132	Ditto.	
Hatton, Alfred Rowland	133	Ditto.	
Mukherji, Dhirendra Nath	134	Ditto.	
Naug, Durga Pada	135	Ditto.	
Slater, Robert Anderton Foxcroft	136	Ditto.	
Banerji, Niderson	137	Ditto.	

SECOND CLASS.

Villiers, Rudolph Rehling	214	31st March 1921.	
Chowdhuri, Surendra Chandra	215	Ditto.	
Banerji, Chandra Mohan	216	Ditto.	
Banerji, Harendra Chandra	217	Ditto.	
Newton, Vincent Sanderson	218	Ditto.	
Chakravarti, Dharmapada	219	Ditto.	
Banerji, Sudhiraj Kumar	220	23rd December 1921.	
Gue, Bama Charan	221	Ditto.	
Mair, George Dennis	222	Ditto.	
Rawal, Girija Shankar, S.	223	Ditto.	
Ganguli, Manindra Nath	224	Ditto.	
Roy, Debi Prasanna	225	Ditto.	
Bose, Sudhindra Narayan	226	Ditto.	
Chakravarti, Panchananda	227	Ditto.	
Chowdhury, Bhaskorendra	228	Ditto.	
Trevedi, Ambalal Keshavlal	229	Ditto.	
Pandaya, Pranjivan Hargovind	230	Ditto.	
Banerji, Jitendra Nath	231	Ditto.	
Sen Gupta, Jitendra Nath	232	Ditto.	

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 2—*concld.*

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1921—*concld.*

(*b*) Certificates of competency.

SECOND CLASS.

NAME.	No. of certificate.	Date of certificate.	REMARKS.
Mukherji, Balaram	233	23rd December 1921.	
Ghosh, Niranjan	234	Ditto.	
Chakravarti, Durgapada	235	Ditto.	
De, Bhagalati Charan	236	Ditto.	
Madath, Hoveeph	237	Ditto.	
Gade, Percival Solomon	238	Ditto.	
Dutt, Charu Chandra	239	Ditto.	
Roy, Aswini Kumar	240	Ditto.	
Bhattacharji, Umesh Chandra	241	Ditto.	
Das, Sudhir Chandra	242	Ditto.	
Chisholm, Joseph	243	Ditto.	
Paul, Debi Prosad	244	Ditto.	
Robson, Bertie	245	Ditto.	
Kouwen, Charles Glendowe	246	Ditto.	
Ganguli, Krishnendra Nath	247	Ditto.	
Palit, Basanta Kumar	248	Ditto.	
Banerji, Atul Krishna	249	Ditto.	
Mukherji, Jitendra Nath	250	Ditto.	
Chatterji, Tara Pado	251	Ditto.	
Mukherji, Kamala Kanta	252	Ditto.	
Dey, Pran Krishna	253	Ditto.	
Dhar, Radhika Ranjan	254	Ditto.	
Kothari, Nehalchand Liladhar	255	Ditto.	
Bose, Sachindra Nath	256	Ditto.	
Chowdhuri, Anil Bhusan	257	Ditto.	
Biswas, Tapesh Chandra	258	Ditto.	
Chakrabarti, Jogendra Nath	259	Ditto.	
Chowdhuri, Panchanan	260	Ditto.	
Mukherji, Rama Prosad	261	Ditto.	
Bhattacharji, Manoran	262	Ditto.	
Sain, Pran Dhon	263	Ditto.	
Sircar, Satish Chandra	264	Ditto.	
Mukherji, Nitya Hari	265	Ditto.	
Roy, Rakhal Chandra	266	Ditto.	

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 3.

List of Universities and Colleges approved by the Governor-General in Council for the purposes of Rules 32 and 33 under the Indian Mines Act.

Name of Institution and Degree or Diploma.	Date.
University of Birmingham in respect of its Degree of B.Sc. in Mining and Diploma in Mining.	11th June 1904.
University College of Bristol in respect of its Senior Diploma in Mining.	16th September 1904.
University of Cambridge in respect of its Diploma in Mining Engineering.	6th June 1905.
University of Durham in respect of its Degree of B.Sc. in Mining.	21st December 1903.
Durham College of Science in respect of its Diploma in Mining .	29th June 1904.
University of Glasgow in respect of its Degree and Diploma in Mining.	28th September 1904.
Glasgow and West of Scotland Technical College in respect of its Diploma in Mining.	28th June 1904.
University of Leeds in respect of its Degree of B.Sc. in Mining and Diploma in Mining.	21st November 1904.
University of London in respect of its B.Sc. Degree in Mining for Internal Students, subject to the Degree being endorsed by the University with a certificate of four months' practical experience in a mine.	9th June 1905.
University of London in respect of its B.Sc. Degree in Mining for External Students, subject to the Degree being endorsed by the University with a certificate of four months' practical experience in a mine.	7th August 1906.
Royal School of Mines in respect of its Associateship in Mining .	24th March 1904.
University of Oxford in respect of its Diploma B. for Colliery Engineers (in Scientific Engineering and Mining subjects).	11th February 1905.
University College of Sheffield in respect of its Diploma in Mining.	15th July 1904.
University College of South Wales and Monmouthshire in respect of its Diploma in Mining.	19th April 1904.
Wigan Mining and Technical College in respect of its Diploma in Mining.	26th August 1904.
Bengal Engineering College, Sibpur, in respect of its Diploma in Mining.	22nd February 1907.
Merchant Venturers' Technical College, Bristol, in respect of its Diploma in Mining Engineering.	5th October 1905.
Victoria University of Manchester in respect of its Degree and Certificate of Mining.	14th February 1906.
University College of Nottingham in respect of its Diploma in Mining Engineering.	28th March 1906.
University of Sheffield in respect of its Degree of Bachelor of Engineering (Mining).	30th June 1906.
Heriot-Watt College in respect of its Certificate in Mining Engineering.	16th January 1908.
Calcutta University in respect of its Degree of Bachelor of Engineering in the Branch of Mining Engineering.	24th September 1910.
Harvard University, Cambridge, Massachusetts, in respect of its Diploma in Mining Engineering.	22nd February 1913.
Columbia University, New York, in respect of its Degree of Engineer of Mines.	13th March 1915.
California University, United States of America, in respect of its Degree of Mining Engineer.	19th February 1916.
Pittsburg University, United States of America, in respect of its Degree of Engineer of Mines.	19th February 1916.
Leland Stanford Junior University, California, in respect of its Degree of Bachelor of Arts in Geology and Mining.	10th August 1918.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 4.

BENGAL ENGINEERING COLLEGE.

THE MINING CLASSES.

Admissions to the Mining Diploma Course at the Bengal Engineering College.

The Diploma Course covers two Sessions, commencing yearly in April, and lasting till the examinations in the following March. (There is a vacation of about three months in August, September and October.) Six weeks of each Session is spent during November and December at a camp of mine surveying in the colliery districts.

Three classes of students are admitted—

Occasional—who are admitted to receive training in connection with private business.

Regular—who need have no experience of mining.

Special—who have had about two years' previous experience of coal-mining (underground).

A total of 4 seats yearly are reserved for candidates domiciled in Bihar and Orissa and 1 seat each for a candidate domiciled in Assam and Mysore.

Admissions are made as follows:—

Regular and occasional students.—Age may not exceed 20 on January 1st of the year of admission.

A.—Through a special preparatory course of one year's duration at the Bengal Engineering College. Admissions at the beginning of March.

B.—Through the Sub-Overseer classes (a two years' course at Dacca, Burdwan, Rajshahi and Pabna in Bengal; Bankipur in Bihar and Orissa).

Special students—

C.—Direct from the mines to the Mining Diploma classes without passing through either A or B. Admissions at the beginning of April. Applications must be made by 1st March accompanied by certificates from the colliery managers under whom candidates have served, showing the period and nature of employment underground.

Admission qualifications to A, B and C—

The passing of the B. Final or the Matriculation Examination in the 1st Division with additional mathematics, the Junior Cambridge Examination held at the end of the supplementary course for elementary European Schools, or equivalent.

The number that can be admitted is limited. The selection of candidates rests with the Principal who, all other things being equal, will prefer the younger of two candidates. So many superior candidates apply for admission that selection is now practically confined to those who have completed the I. Sc. S. or Senior Cambridge Course of Study.

Scholarships awarded by the Bengal Government—

For Regular students—

Scholarships of the following number and value are available for regular students admitted under A; these are awarded on the result of the examination held at the end of the Preparatory Course A:—

Two of Rs. 12 monthly.
Three of „ 6 „

Stipends awarded by the Bihar and Orissa Government—

Two Boarding stipends of Rs. 15 monthly tenable for three years by poor and capable students of that Province. These are available in either the Mining or Mechanical and Electrical Engineering classes.

For Special students—Awarded by Bengal Government.

Awarded on the result of the examination held at the end of the lectures given in the colliery districts by the Instructor in Mining.

One of Rs. 50 for Europeans.
One or two of Rs. 25 for Indians.

These amounts should be sufficient to maintain a special student resident at the College.

For further particulars apply for the Mining Classes Circular.

B. HEATON,
Principal, Bengal Engineering College,
Botanic Garden P. O.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 5.

MINING INSTRUCTION IN BENGAL.

[*The Mining Education Advisory Board desire that Colliery Managers will kindly publish this information in their collieries. An appeal is also made to them to support the lectures by seeing that members of their colliery staff, who are suitable, take advantage of the lectures and attend them regularly.*]

The full course comprises two parts, the lectures in which are delivered in alternate years as follows :—

(1) The principles of Coal Mining, 1922-23, 1924-25, etc.

(2) The principles of Mechanical Engineering of Coal Mines, 1921-22, 1923-24, etc.

A fee of Rs. 5 (five rupees) payable to the Mining Instructor on the first registration of his name is charged to each student for each year's series of lectures. This fee is non-returnable.

Programme for Session 1921-22.

Lectures on the principles of Mechanical Engneering of Coal Mines will be delivered in English as follows :—

RANIGANJ COALFIELD.

Deshergarh ...	Lecture-room near Club ...	Wednesdays	5-30	P.M.
Raniganj ...	Bengal Coal Co., Ltd., Zamindary office	Thursdays	5-0	„
Jamuria ...	Chief Mining Engineer's Office, Sibpur Colliery ...	Fridays ...	5-30	„

The course of instruction, consisting of not less than 30 lectures, will commence the first week in September and end in the following April. The examination will be held early in May. Candidates who pass the examination will receive a certificate recording their success. No candidate will, however, be permitted to sit for the examination unless he has attended 50 per cent. of the lectures and received 40 per cent. of the marks allotted for home work.

Scholarships are awarded by the Mining Education Advisory Board on the results of the examination, these will be tenable for two years at the Sibpur College and are granted to enable the holders to attend the full course for the Diploma in the Principles of Mining. One scholarship of Rs. 50 is reserved for Europeans and two of Rs. 25 are awarded to Indians. Candidates are not elegible for these scholarships unless they have completed the full years of practical work in the collieries. Preference will be given to those who have satisfied the examiners in both of the lecture course in the coal-fields.

The following Local Committees have been appointed :—

RANIGANJ COALFIELD.

Deshergarh Centre.	*Jamuria Centre.*	*Raniganj Centre.*
Mr. H. Lancaster, *Chairman.*	Mr. H. Lancaster, *Chairman.*	Mr. H. Lancaster, *Chairman.*
„ J. B. Wardlaw (Deshergarh).	„ P. S. Keelan (Charanpur).	„ P. S. Keelan (Charanpur).
„ Geo. Miller (Sitarampur).	„ G. S. Castles (Charanpur).	„ A. T. Creet (Kalipahari).
„ F. Owen (Deshergarh).	„ D. N. Archibald (Sripur).	„ W. J. Rees (Raniganj).
Babu U. N. Mandal (Deshergarh).	„ W. S. Elphinstone (Asansol).	Babu Promotho Nath Hazra (Toposi).
„ P. C. Tarafdar (Mugma).	Babu S. N. Banerjee (Faridpur) Colliery, Charanpur P. O.).	„ Purna Chandra Bagchi (Kalipahari).
„ S. N. Ghosh (Barakar).		„ S. Chaudhuri (Jamehari, Raniganj).

B. HEATON,

Secretary, Mining Education Advisory Board, B. E. College, Botanic Garden P. O., Howrah.

APPENDIX IV—*contd.*

MISCELLANEOUS.—*contd.*

Statement No. 5—*contd.*

MINING INSTRUCTION IN THE COALFIELDS OF BENGAL.

SYLLABUS OF THE COURSE OF INSTRUCTION.

The lectures in the following courses are delivered in alternate years :—

THE PRINCIPLES OF COAL MINING.

1. *Geology.*—General structure of the earth's crust; igneous and aqueous rocks; definitions of outcrop, dip, strike, fault, roll, wash-out and dyke, etc; recording geological observations, reading a geological map; description of the Indian coal-bearing rocks; composition and properties of coal. Commercial values of coal.

2. *Exploration.*—Prospecting, trial shafts and trenching; advantages of boring; methods of boring; driving through faults, uses of boreholes in mines, etc.

3. *Breaking ground.*—Common tools; storage and use of explosives; electric fuses; machine drills; coal-cutting machines.

4. *Sinking.*—Site of colliery; position of inclines and shafts, their excavation and shape, apparatus used in sinking; lining shafts, arrangements at top of sinking shaft; brief mention of special methods of sinking.

5. *Methods of working.*—Quarrying advantages of bench work, disposal of soil; shaft pillars; pillar and gallery method, working thick seams in stages, extraction of pillars, panels; brief description of longwall and chambering methods.

6. *Supporting.*—Props and lids, bars chocks or cogs, square sets; special timbering in loose ground; arching; steel girders; packing; dry and hydraulic stowing.

7. *Mine gases.*—Their experimental preparation by chemicals, and illustration of their physical and physiological properties; their chemical composition; methods of detecting; explosions; spontaneous combustions of coal; dangers of coal dust.

8 *Ventilation.*—Ascensional currents, currents induced by the heat of steam or furnace; mine fans; friction of air in mines; theory of splitting the air; calculations of ventilating pressure, etc; coursing the air; measurement of quantity of air; use of anemometer, water-gauge, thermometer and barometer, reversing the air current.

9. *Safety lamps.*—Principle of the safety lamps; Sir Humphrey Davy's experiment, types of safety lamps; firedamp detectors.

THE PRINCIPLES OF MECHANICAL ENGINEERING OF COAL MINES.

1. *Applied Mechanics.*—Mensuration; definitions of force, motion, friction, work and energy; the simple machines; mechanical and electrical units; hydrostatics; the siphon; pressure of gases; Boyles' law.

2. *Steam, Electricity and Compressed air.*—Theory of steam boilers and their fittings; the steam engine; the dynamo; the electric mortor; the air compressor.

3. *Winding.*—Types of winding engines and description of parts; calculation of the dimensions of winding engines; strength of ropes and chains; detaching hooks; over-winding prevention devices; rope cappings; care and examination of ropes, buckets, cages, guide ropes.

4. *Pumping.*—The lift pump; the force pump; sinking pumps; pumps with positive valve motion; the pulsometer; turbine pumps; calculations of the dimensions of pumps; methods of supporting pumps and pipes; strength of pipes, pipe joints; dams to hold back water.

5. *Hauling.*—Tramways; tubs; hand tramming; horse haulage; self-acting inclines; locomotives; single rope haulage; main and tail rope haulage; endless rope or chain haulage; calculations of the dimensions of hauling engines, ropes, etc.; capping of haulage ropes; couplings; haulage clips, etc.; signalling.

6. *Surface arrangements.*—Headframes and pulleys; receiving frames; keps; arrangements of roads on pit bank; tipplers; simple screening and sizing; railway sidings; aerial rope ways.

7. Simple treatment of coking and bye-product ovens.

Adopted by the Mining Education Advisory Board at their meeting of 27th January 1917. Copies of this circular may be obtained from the Secretary or from the Instructor.

BENGAL ENGINEERING COLLEGE,
BOTANIC GARDEN P. O.,
The 10th August 1921.

B. HEATON,
Secretary.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd*

Statement No. 6.

MINING INSTRUCTION IN BIHAR AND ORISSA.

[*The Mining Education Advisory Board desire that Colliery Managers will kindly publish this information in their collieries. An appeal is also made to them to support the lectures by seeing that members of their colliery staff, who are suitable, take advantage of the lectures and attend them regularly.*]

The improved syllabus of lectures is being introduced this year.

The following is an abstract of the full three year course—

First year.—(1) Mathematics. (2) Elementary Science.

Second year.—(1) Elementary Mechanics. (2) Mechanical Drawing.

Third year.—(1) Elementary Mining Surveying.
(2) Mechanical and Electrical Engineering.

Copies of the detailed syllabus may be obtained from the Secretary and the lecturer.

A fee of Rs. 5 (five rupees) is payable by each student to the Mining Lecturer on the first registration of his name for each year's course of lectures. This fee is non-returnable.

Programme for Session 1921-22.

Lectures on Mathematics and Elementary Science will be delivered in English on two nights each week at the following centres on days and hours to be fixed by the Lecturer.

Jharia	...	...	...	Lecture-room near Club.
Sijua	...	...	...	Lecture-room near Station.

The Mining Lecturer will deliver during the current session only the series of lectures on the Principles of Mechanical Engineering of Coal Mines as laid down in the old course one night weekly. These will be attended by students who have qualified in the other part of the old course, namely, in the Principles of Coal Mining.

The course of instruction, will commence in the first week in September and end in the following May. The examination will be held in June. Candidates who pass the final examination will receive a certificate recording their success. No certificate shall be given to candidates unless they attend the 2nd and 3rd years. No candidate will, however, be permitted to sit for the examination unless he had attended 50 per cent. of the lectures and received 40 per cent. of the marks allotted for home work.

The following Local Committees have been appointed:—

JHARIA COALFIELD.

Jharia Centre.

Mr. F. L. G. Simpson, Chairman.
„ R. G. M. Bathgate (Jamadoba).
„ J. Murray (Kustore).
„ J. B. Argyle (Lodna).
„ R. Barrowman (Standard Coal Company, Jharia).
Babu Jhaveri Lal Kalayan Rai Dholakia (Joyrampur Colliery, Kusunda P. O.).
„ Narendra Nath Sarkar (South Kujama, Jharia).

Sijua Centre.

Mr. F. L. G. Simpson, Chairman.
„ A. A. Agabeg (Sijua).
„ R. Heron (Bhalgora, Jharia P.O.).
„ H. M. Bull (Bansjora).
„ G. C. Leach (Sijua P. O.).

Babu Trikumdas Doyal (Bullihari Colliery, Kusunda P. O.).
„ Meghji Bhimji Relia (Angarpatra).

B. HEATON,
Secretary, Mining Education Advisory Board,
B. E. College, Botanic Garden P. O.,
Howrah.

The 15th August, 1921.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 6—*contd.*

MINING INSTRUCTION IN THE COALFIELDS OF BIHAR AND ORISSA.

Syllabus of the Course of Instruction.

First and 2nd year courses.

Mathematics.—Arithmetic and Algebra up to simple equations. Mensuration and use of squared paper. Trigonometry—up to solution of Triangles.

Elementary Science.

Physics.—Volume of displacement, Balances, Density, Specific gravity bottle, Fluid pressure, Hydrometer, Syphon, Barometer, Ideas of forces, Equilibrium of three forces, centres of gravity, Friction, Thermometer, Expansion due to heat, Latent heat of steam, Properties of solids, Liquids and gases, Boyles' Law, Hydrostatics, Elements of electricity and Magnetism, Electrical units.

Chemistry.—Atomic Theory, Elements, Compounds, mixtures, acids, bases, composition of atmosphere and of gases met with in mines.

Mechanics.—Units of Mass, Length and time, Levers, Pullies, Wedges, Gearing, Simple Machines, Equilibrium, Units of work and energy, Horse Power.

Mechanical Drawing.—Conventional signs, Construction of Scales, Nuts, Bolts, Screw threads, simple parts of machines, Engines and Pumps.

Third year course.

Mining Surveying.—Use of pens, Scales, protractors, Surveying by means of the chain only. The Miners dial. Loose needle surveying. Fixed needle surveying. Levelling, Field books, Adjustment of Instruments.

The Principles of Coal Mining.

1. *Geology.*—General structure of the earth's crust; igneous and aqueous rocks; definitions of outcrop, dip, strike, fault, roll, wash-out and dyke, etc.; recording geological observations, reading a geological map; description of the Indian coal bearing rocks; composition and properties of coal. Commercial values of coal.

2. *Exploration.*—Prospecting, trial shafts and trenching; advantages of boring; methods of boring; driving through faults; uses of boreholes in mines, etc.

3. *Breaking ground.*—Common tools; storage and use of explosives; electric fuses; machine drills; coal-cutting machines.

4. *Sinking.*—Site of colliery; position of inclines and shafts, their excavation and shape, apparatus used in sinking; lining shafts; arrangements at top of sinking shaft; brief mention of special methods of sinking.

5. *Methods of working.*—Quarrying, advantages of bench work, disposal of soil; shaft pillars; pillar and gallery method, working thick seams in stages, extraction of pillars, panels; brief description of longwall and chambering methods.

6. *Supporting.*—Props and lids, bars, chocks or cogs, square sets, special timbering in loose ground; arching; steel girders; packing; dry and hydraulic stowing.

7. *Mine gases.*—Their experimental preparation by chemicals, and illustration of their physical and physiological properties; their chemical composition; methods of detecting; explosions; spontaneous combustion of coal; dangers of coal dust.

8. *Ventilation.*—Ascensional currents, currents induced by the heat of steam or furnace; mine fans; friction of air in mines; theory of splitting the air; calculations of ventilating pressure, etc.; coursing the air; measurement of quantity of air, use of anemometer, water gauge, thermometer and barometer, reversing the air current.

9. *Safety lamps.*—Principle of the safety lamps; Sir Humphrey Davy's experiment; types of safety lamps; firedamp detectors.

The Principles of Mechanical and Electrical Engineering of Coal Mines.

1. *Applied Mechanics.*—The practical application of the principles taught in the 1st and 2nd years.

2. *Steam, Electricity and Compressed air.*—Theory of steam boilers and their fittings; the steam engine; the dynamo; the electric motor; Electric Lighting and airing; the air compressor.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 6—*concld.*

3. *Winding.*—Types of winding engines and description of parts; calculation of the dimensions of winding engines; strength of ropes and chains; detaching hooks; over-winding prevention devices; rope cappings; care and examination of ropes, buckets, cages, guide ropes.

4. *Pumping.*—The lift pump; the force pump; sinking pumps; pumps with positive valve motion; the pulsometer; turbine pumps; calculations of the dimensions of pumps; methods of supporting pumps and pipes; strength of pipes; pipe joints dams to hold back water.

5. *Hauling.*—Tramways; tubs; hand tramming; horse haulage; self-acting inclines locomotives; single rope haulage; main and tail rope haulage; endless rope or chain haulage, calculations of the dimensions of hauling engines, ropes, etc.; capping of haulage ropes; couplings; haulage clips, etc.; signalling.

6. *Surface arrangements.*—Headframes and pulleys; receiving frames; keps; arrangements of roads on pit bank; tipplers; simple screening and sizing; railway sidings; aerial ropeways.

7. Simple treatment of coking and bye-product ovens.

B. HEATON,

Secretary.

BENGAL ENGINEERING COLLEGE;

The 15th August, 1921.

Statement No. 7.

DEPARTMENT OF MINES IN INDIA.

Regulations made by the Board of Examiners under Rule 30 of the rules applying to coal-mines made under Section 20 of the Indian Mines Act, 1901, for the conduct of examinations for colliery managers' certificates of competency.

(1) No Member of the Board of Examiners shall act as a local examiner, except in emergent cases.

(2) When possible one or more members of the Board of Examiners shall attend every examination on at least one of the days.

(3) So far as is practicable, the local examiners for each examination shall be :—

(*a*) An Inspector of Mines, who shall be Secretary to the local examiners.

(*b*) Two Mining Engineers or Colliery Managers who must be the holders of first class certificates. Provided that a Mining Professor may be appointed instead of one of the Mining Engineers or Managers.

(4) The remuneration of each local non-official examiner shall be Rs. 150 for each examination, and a capitation fee of Rs. 2 for each first class candidate and Re. 1 for each second class candidate examined, and travelling expenses and halting allowances on the first class scale under the Civil Service Regulations, but an Inspector of Mines, acting as a local examiner, shall not be entitled to any fee or remuneration whatsoever, beyond the travelling expenses and halting allowances due to him in his official capacity.

(5) The examinations will be advertised at least four months before the date of the examinations and applications on the form prescribed by the Board of Examiners supported by original certificates as to the experience and character, and fees will be received up to a date, duly advertised not less than one month prior to the examinations. No application which is not on the prescribed form will be considered by the Board. No application which is not supported by the certificate and fees referred to above will be considered by the Board if submitted after the advertised date for receiving such applications and fees.

(6) The subjects for examination shall be :—

(*a*) *Arithmetic and handwriting.*

(*b*) *Practical and theoretical coal-mining*, including surface and under ground arrangements, sinking, timbering, ventilation, gases met with in coal-mines, a know-

Statement No. 7.

ledge of plans, surveying and levelling, and of the various instruments used in mining. Questions may also be asked upon geology, sanitation, hydraulics, explosives, safety lamps and similar subjects. Candidates may also be required to show how to arrange the ventilation and haulage of a mine on a given plan.

(*c*) *Practical mechanics*, including steam, steam-engines, steam-boilers, pumps, strength of materials; eletricity and compressed air as applied to coal-mining.

(*d*) *The Indian Mines Act*, and rules made under the Act.

(7) The examination shall be both written and oral and the subjects and conditions shall be the same for candidates for both classes of certificates; but the examination questions shall be made suitable for each class of certificate.

The examiners shall have power to eliminate the oral examination in the case of candidates who do not reach a standard in the written examination to be prescribed by the Board of Examiners.

(8) The following shall be the maximum number of marks given for each subject:—

Subject.	First class.			Second class.		
	Papers.	*Viva voce.*	Total.	Papers	*Viva voce.*	Total.
1	2	3	4	5	6	7
(*a*) Arithmetic and handwriting	50	...	50	50	...	50
(*b*) Mining	160	60	220	140	80	220
(*c*) Mechanics	110	40	150	100	50	150
(*d*) Indian Mines Act	60	20	80	50	30	80
Total	380	120	500	340	160	500

(9) A candidate for a certificate of competency must qualify in each of the subjects for examination, and must obtain 40 per cent. of the maximum marks obtainable for each paper, 40 per cent. of the maximum marks obtainable for the oral examination, and 60 per cent. on the whole examination (written and oral) to qualify.

(10) A candidate for a first class certificate, who does not reach the necessary standard, may nevertheless, at the discretion of the local examiners, be recommended to the Board of Examiners for a second class certificate, if, in their opinion, he has done sufficiently well to deserve it.

(11) The Secretary to the local examiners shall submit a report, of the result of the examination giving the number of marks obtained by each candidate in each subject, to the President of the Board of Examiners within one month of the close of the examination.

(12) The questions which the local examiners intend to put in the examination papers shall be submitted in draft to the Board of Examiners, for approval, at least six weeks before the date of the examination. Answers to questions on arithmetic and those involving calculations and all plottings and levellings must be submitted to the Board of Examiners along with the question papers.

(13) At least one examination for first class candidates and at least one examination for second class candidates shall be held annually in one of the Bengal or Bihar and Orissa coal-fields; and in other parts of India examinations will be held whenever, in the opinion of the Board of Examiners, the number of candidates in a coal-mining centre justifies the holding of an examination.

(14) No candidate will be allowed to take part in the examination until he has produced an authorization from the Board of Examiners.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 7.

(15) Every candidate before taking his seat must sign a register, in which he will be given a definite number. He must sign his name and write his registered number at the top of every page of the paper on which he writes the answers to the questions.

(16) The number of the question must be given in bold figures before the answer to each question.

(17) The calculations and work by which a result is obtained must be clearly shown in immediate connection with the answer to each question.

(18) Answers must be strictly confined to the questions asked.

(19) Sketches may be made to make answers clear.

(20) When sketches are asked for, it should be understood that, unless otherwise stated, free hand sketches, with dimensions, are all that is necessary, and candidates should not spend time in making finished drawings.

(21) Any candidate speaking to any other candidate during the examination, or using any book, notes or private paper, or acting in any manner which the examiners consider improper will be liable to be disqualified at their discretion. The Board of Examiners may in such a case use their discretion as to allowing the candidate to sit at any future examination.

(22) When a candidate has completed the answers to the questions, or when the time allowed for answering the questions has elapsed, or he has been disqualified, he must hand the paper of questions and his answers to the examiners, and at once leave the examination room.

(23) A time table will be supplied to each candidate at the commencement of the first day's examination.

(24) The oral examination will be held at a subsequent date. Only those candidates who obtain a certain degree of proficiency in the written examination will be examined orally. Due notice of time and place will be sent to each candidate required by the examiners for oral examination.

(25) The number of marks given for each question will be shown in brackets at the end of the question.

(26) Ink and paper will be provided, and no paper other than the official paper provided may be used. Candidates must bring their own pens and pencils, drawing pens and drawing instruments, including a protractor.

These Regulations cancel all previous regulations and shall take effect from the 30th September, 1921.

R. R. SIMPSON,

Chief Inspector of Mines in India and ex-officio
President of the Board of Examiners.

DHANBAD;

The 15th February, 1921.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 8.

DEVELOPMENT DEPARTMENT.

NOTIFICATION.

Dated Rangoon, the 14th April 1921.

No. 19.—In exercise of the power conferred by section 29 of the Indian Mines Act, 1901, as amended by the Decentralization Act, 1914, the Local Government is pleased to exempt the mines specified in the second and third columns of the table below from the operation of the said Act, subject to the proviso, if any, contained in the fourth column:—

Serial No.	Nature of mine.	Locality.	Proviso.
(1)	(2)	(3)	(4)
1	Ruby workings (native mines).	Ruby Mines District.	
2	Twinza oil wells ...	Magwe Division.	
3	Steatite mines ...	Minbu District.	
4	All sand-stone, stone or laterite quarries.	Whole of Burma ...	Provided that no substantial part of such quarries extends beneath the superjacent ground, and also provided that the exemption, hereby conferred, shall cease to apply to any quarry, the further exemption of which the Local Government may, by general or special order, declare to be inexpedient.

By order,

W. BOOTH-GRAVELY,

Revenue Secretary to the Government of Burma.

Statement No. 9.

DEVELOPMENT DEPARTMENT.

NOTIFICATION.

Dated Rangoon, the 11th May 1921.

No. 21 (CORRIGENDUM).—In this department Notification No. 19, dated the 14th April 1921, *for* the words "Ruby Mines District" in column 3 of the table subjoined to the notification *substitute* "Katha District."

By order,

W. BOOTH-GRAVELY,

Revenue Secretary to the Government of Burma.

APPENDIX IV—*concld.*

MISCELLANEOUS—*concld.*

Statement No. 10.

LAND ACQUISITION (MINES) ACT, 1885.

Particulars required to be furnished by colliery owners to Local Governments when giving notice under Section IV of the Land Acquisition (Mines) Act, 1885, of their intention to work coal under land acquired for a railway :—

(*a*) The name, residence and profession of the person giving the notice.

(*b*) The name of the mine, together with that of the village and district in which the mine is situate.

(*c*) The name of the railway line or of the siding and the main line to which the siding is attached, under which the mine is situate.

(*d*) The names of the railway stations and the mileage between which the said siding or the said portion of the railway land, under which the mine is situate, falls.

(*e*) The number and date of the declaration under which the land was acquired.

(*f*) A tracing showing the boundaries of, and the area over which, the acquired land extends.

SGP I—21—V5-(1)-9 10-22—1,250.

2714/xxx

Department of Mines, India

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REPORT

OF THE

CHIEF INSPECTOR OF MINES IN INDIA

UNDER THE INDIAN MINES ACT (VIII OF 1901)

FOR THE YEAR ENDING

31st December 1922

BY

D. PENMAN, B.Sc. (Hons.), M.I.M.E.,
Offg. Chief Inspector of Mines in India

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FROM

D. PENMAN, ESQ., B.SC. (Hons.), M.I.M.E.,
Offg. Chief Inspector of Mines in India.

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,
DEPARTMENT OF INDUSTRIES AND LABOUR, SIMLA.

Dated Dhanbad, the 13th June 1923.

SIR,

I have the honour to submit the report upon the inspection of mines in British India for the year ending 31st December 1922.

INTRODUCTION.

It may be explained that this report relates entirely to the administration of the Indian Mines Act, 1901. The Act applies to British India only and not to the Indian States. Mines which are less than 20 feet deep are excluded from its scope. For the complete figures of production of all minerals raised from excavations of all depths in British India and the Indian States reference may be made to the statements of the "Mineral Production of India" published in the Records of the Geological Survey of India, and to the "Quinquennial Review of the Mineral Production of India" published every five years by the same Department. Mysore, where the Kolar goldfield is situated, and Hyderabad (Nizam's Dominions) have their own Departments of Mines. Detailed information of the mineral industries of those States is given in the annual reports of their respective Chief Inspectors of Mines.

Section I.—Persons Employed.

During the year 1922 the daily average number of persons working in and about the mines regulated by the Indian Mines Act was 228,511, as compared with 249,663 in the previous year. This is a decrease of 21,152 persons or 8·47 per cent. Of these persons 137,017 worked underground and 91,494 on the surface.

One hundred and forty-two thousand one hundred and three were adult males, 78,806 were adult females and 7,602 were children under 12 years of age.

Those employed in coal mines numbered 184,355 which is 6,292 less than those employed in 1921.

In the Jharia and Raniganj coalfields labour on the whole was very scarce. At the beginning of the year a prolonged strike on the East Indian Railway interfered greatly with the working of the collieries and gave rise to a considerable accumulation of coal at the mines. Later on in the year a good harvest affected the labour supply to some extent. There was no general increase in wages.

There was no serious epidemic disease and the general health of the labour force in both coalfields was good.

In the Giridih coalfield during the first half of the year, political agitation affected the labour very considerably. A heavy monsoon and prolonged harvesting operations consequent on good crops reduced the labour supply in the last half of the year.

In Hazaribagh there were mild outbreaks of cholera and influenza at the Albion coal mine.

In Baluchistan the total labour force was about the same as in 1921. No female labour was employed. A considerable number of labourers is supplied by nomads from Afghanistan during their winter migrations. At the Khost mines malaria was prevalent but no cases of cholera were reported.

In the Punjab a good harvest affected the supply of labour to some extent.

At the Margherita group of collieries in Upper Assam there were during the year 1,706 recruitments and 581 repatriations. Of the new recruits 968 were Nepalese. The total labour population was 7,860 persons as compared with 7,586 persons in 1921. The adult workers totalled 4,726, as compared with 4,828 in the preceding year. The labour supply was only short during the cultivating seasons. There was no increase of wages, and there were no strikes or epidemics during the year. Influenza was, however, prevalent throughout the whole year.

In the Hazaribagh mica field labour was not plentiful. At the beginning of the year political agitation was a disturbing factor and later on a good harvest had the effect of reducing the number of workmen considerably.

In the Madras Presidency owing to the dullness of the mica market work was scarce, and for that reason labour was fairly plentiful. There were no strikes nor epidemics.

At the copper mines in the Singhbhum District there was, as heretofore, a shortage of labour of the right type. At the iron ore mines near Manharpur and at Gua the labour supply was scarce. There were no epidemics or strikes.

At Manharpur wages were increased during the year by 10 per cent. At the Bengal Iron Company, Limited's iron-ore mines at Manharpur an active anti-malarial and anti-hookworm campaign was carried on throughout the year.

Owing to a good harvest, labour was scarce in the manganese areas of the Central Provinces.

At the Bawdwin lead-silver mines the labour supply was rather better than in 1921.

Section II.—Output of Minerals.

COAL.

The statement given below shows the output of coal in the various provinces in British India during the years 1921 and 1922 :—

	Output in tons.	
	1922.	1921.
Assam	347,650	312,022
Baluchistan	40,632	42,155
Bengal	4,328,986	4,259,642
Bihar and Orissa	12,708,527	12,964,659
Burma	172	300
Central Provinces	675,841	712,914
Punjab	67,180	67,242
TOTAL	18,168,988	18,358,934

The total output in 1922 was 18,168,988 tons which is 189,946 tons or 1·03 per cent. less than in the previous year, when an increase in the output of 7·47 per cent. was recorded.

The opening stocks in 1922 were 2,106,866 tons and the closing stocks 2,651,554 tons.

The despatches of coal amounted to 14,543,113 tons and 2,601,073 tons were consumed on the collieries. The quantity of coal used for coking was 480,114 tons and 133,521 tons of hard coke and 188,979 tons of soft coke were made. At a large number of collieries coal is now despatched from the collieries to coke plants

elsewhere, and this coal is included under despatches. These despatches amounted to 333,752 tons in 1922. The figures for coke given in this report relate only to coke made on the collieries.

Analyses of the figures relating to the output of coal and the manufacture of coke will be found in Appendix I, Table II, on pages 34 and 35.

The decrease of output in Bihar and Orissa alone was 256,132 tons. There was also a decrease of 37,073 tons in the Central Provinces. There were increases in Bengal of 69,344 tons and in Assam of 35,628 tons. Baluchistan, Burma and the Punjab showed slight decreases. Figures of output for the two principal coalfields are as follows :—

	Output in tons.		*Percentage of decrease.*
	1922.	1921	
Jharia Coalfield	9,936.299	10,059,649	1·23
Raniganj Coalfield	5,203,214	5,211,845	0·17

It should be remembered that although the Raniganj coalfield is chiefly in Bengal a considerable part of it is in the province of Bihar and Orissa.

A prolonged strike on the East Indian Railway caused very considerable dislocation of the coal trade at the beginning of the year in the provinces of Bihar and Orissa and Bengal. The strike was settled towards the end of April, but it was several months before conditions on the railway became normal. In November a new system of the distribution of wagons was adopted. Prices for first class coal remained steady during the year.

During the monsoon the output of coal was handicapped by the flooding of many mines, particularly in the Jharia coalfield, owing to an exceptionally heavy rainfall. Scarcity of labour during the harvesting season also adversely affected the output. Several disastrous fires due to spontaneous combustion occurred in both the Jharia and Raniganj coalfields involving stoppage of output from the areas on fire. The general adoption of hydraulic stowing in thick seams of coal would prevent fires due to spontaneous combustion, but unfortunately the extra cost involved has deterred many mine owners from employing it. At several collieries, however, situated on the banks of rivers which furnish ample supplies of sand, hydraulic stowing has been successfully employed for some time.

Most of the large collieries are now equipped with electric power. The scarcity of coal mining labour has brought about a great advance in the use of coal-cutting machinery. During 1922 there were 40 electrically-driven coal-cutting machines in the Raniganj and Jharia coalfields and these machines cut a total area of 1,065,456 square feet. In addition, three machines operated by compressed air cut 190,890 square feet in a colliery in the Jharia coalfield. At one colliery a mechanical loading conveyor operated by compressed air was employed. Statistics are given in Appendix I, Tables 6, 7 and 8 showing the amount of electric plant in the various districts and provinces of British India, and the number of electrically-driven coal-cutters at work.

The market for coal in the Central Provinces except during the period of the strike on the East Indian Railway in Bihar and Orissa and Bengal was disappointing throughout the year. During the period of the strike coal was sent from the Central Provinces to the United Provinces, Punjab and the Bombay Presidency; but on its termination trade in the Central Provinces was again chiefly dependent on an inadequate demand from local industries and the consumers of Central India. The importation of foreign coals into Bombay at falling prices during the latter half of the year, the pre-payment of freight on all coal from the Central Provinces and the drop in prices of some of the coals of Bengal and Bihar and Orissa, together with the introduction of the rake system of wagon supplies in those provinces, formed a combination of circumstances which re-acted unfavourably on the coal trade in the Central Provinces. At the close of the year collieries were left with unsold stocks in spite of curtailed outputs.

Figures showing the output per person employed are given below :—

	Tons per person employed.			
	Below ground.		Above and below ground.	
	1922.	1917-21.	1922.	1917-21.
British India	169	177	98	106
Bengal and Bihar	179	182	104	109
Assam	147	151	96	97
Baluchistan	56	65	32	47
Central Provinces	83	107	51	69
Punjab	72	66	40	40

In the United Kingdom in 1920 the output of coal per person employed below ground was 232 tons, and per person employed above and below ground 184 tons.

MICA.

The output was 30,089 cwt., as compared with 29,470 cwt., in 1921. There was thus an increase of 2·10 per cent.

Following the depression during the year 1921, the mica trade was at a very low ebb during the greater part of 1922. After the rains, however, a certain demand for splittings of all kinds was experienced in the Hazaribagh District.

MANGANESE ORE.

There was a decrease (26·64 per cent.) in the output of manganese, the figures being 392,322 tons, as compared with 534,757 tons in 1921. There was little demand for ore during the early part of the year, but from the month of May to the end of the year there was a strong demand with rising prices. The average price of manganese ore during the year was 9½*d.* per unit f. o. b. Bombay or Calcutta, which was a marked improvement on the average price obtained during 1921. Ocean freights ruled at 20*s.* per ton.

ROCK-SALT.

The output of rock salt was 187,157 tons, as compared with 123,084 tons in 1921, and 181,092 tons in 1920. The low output in 1921 was due to a prolonged strike at the Khewra mines from which the bulk of the output of rock-salt is obtained.

LEAD-SILVER ORES.

The output of lead and silver ores from the Bawdwin mines in the Northern Shan States, Burma, was 172,017 tons in 1922, as compared with 144,089 tons in 1921. The increase was, therefore, 19·38 per cent. In addition 22,435 tons of dump ore were treated. The production of refined lead was 39,214 tons, and of refined silver 4,205,584 ounces. A small quantity of silver (554 ounces) was produced as a bye-product of gold mining in Madras. The average prices obtained were Rs. 361-11-11 per ton of refined lead and Rs. 2-3-5 per standard ounce of refined silver.

WOLFRAM AND TIN ORES.

There was an increase in the output of wolfram for the year of 6·56 per cent. The figures were 942 tons, as compared with 884 tons in 1921. There was also a small increase (4·65 per cent.) in the output of tin ore, the figures being 1,080 tons, as compared with 1,032 tons in 1921. Not a single mine was worked for

wolfram alone during the year. In January the price of wolfram was 10*s.* 6*d.* per unit and in December 13*s.* 9*d.* nominal. The price of tin was £163 per ton early in the year and £178 per ton at the end of the year.

GEMS.

The output of gems increased by 15·46 per cent., the figures being 231,160 carats, as compared with 200,215 carats in 1921. The quantities of each gem mined were as follows:—

	Carats.
Rubies	93,078
Sapphires	102,462
Spinel	35,620

During the year there was a marked revival in the demand for rubies in London, a good deal of it coming from New York. There was, however, practically no advance in prices. In Southern India, however, usually the largest market for the lower priced rubies, there was a considerable falling off in sales. A remarkably fine ruby of 22¾ carats, having an estimated value of between £3,000 and £5,000, was found at the new Enjouk mine belonging to the Burma Ruby Mines, Limited. In this locality the royalties in license fees for the year represented 8,459 "native miners," as compared with 7,435 in 1921. Each miner pays Rs. 20 a month. The monthly average number of miners at work during 1922, therefore, was 705.

GOLD.

The output of gold decreased by 17·02 per cent. The quantity produced was 8,388 ounces, as compared with 10,108 ounces in 1921. At the North Anantapur mines, Madras, no development work was done, only stoping and the treatment of ore being carried on. Some development work was done at the Jibutil (Anantapur) mine. The price obtained for the gold varied from Rs. 24-14-1½ to Rs. 28-9-0 per fine tola.

COPPER ORE.

The output of copper ore was 30,764 tons, as compared with 32,560 tons in 1921, the decrease being 5·52 per cent. The whole of this came from a single mine in the Singhbhum District. A total of 1036 tons 19 cwt. of refined copper was obtained as against 833 tons in 1921. The average value of the copper was about Rs. 1,201 per ton, as compared with Rs. 1,150 in 1921.

IRON ORE.

The production of iron ore fell from 286,190 tons to 240,383 tons, a decrease of 16·01 per cent. The quantity produced at the Manharpur mines was 189,756 tons.

The figures given above do not include the iron ore used at the Jamshedpur Steel Works, supplies for which are obtained from mines in an Indian State which do not come under the operation of the Indian Mines Act nor do they include all the ore produced in British India since some of the excavations are less than 20 feet deep and therefore do not come within the scope of the Mines Act, 1901.

CHROMITE ORE.

The output of chromite was 19,695 tons, as compared with 27,727 tons in 1921, when the output reached a record figure. This is a decrease of 28·97 per cent. The chief producing mines are situated in Baluchistan within 50 miles of the Afghan frontier. The disturbed condition of the border has increased the difficulty of operating the mines.

OTHER MINERALS.

There were increases in magnesite, barytes, fuller's earth, and ochre and decreases in steatite, graphite, clay, limestone, slate, bauxite and apatite.

Section III.—Accidents.

During the year 1922, at mines regulated by the Indian Mines Act, 1901, there were 205 fatal accidents, being a decrease of 27 on the number which occurred in 1921, and a decrease of 4 on the average number in the preceding five years.

These accidents involved the loss of 243 lives or 50 less than in 1921. Of these persons 218 were males and 25 females. In three separate accidents the number of lives lost was 13, 8 and 4 respectively. In four cases 3 lives, and in seven cases 2 lives were lost. There were in addition 292 serious accidents involving injuries to 300 persons. The subsequent remarks under this heading refer only to fatal accidents.

The causes of these accidents have been classified as follows :—

—	Number of accidents.	Percentage of total number of accidents.
Misadventure	120	58·54
Fault of deceased	61	29·76
Fault of fellow workmen	9	4·39
Fault of subordinate officials	7	3·41
Fault of management	6	2·93
Faulty material	2	0·97
TOTAL	205	100·00

There was an improvement in respect of accidents from falls of roof and sides. There were 109 such accidents, as compared with 136 in 1921. Many of them were due to persons working in prohibited places, and frequently the victims had deliberately broken down or passed through a fence. The exercise of more vigilance by the supervising staff would have prevented many of these accidents. In some cases the supervising staff was insufficient in number. Twenty-one fatal accidents causing the loss of twenty-six lives occurred in quarries and surface cuttings.

There were more accidents in shafts. The number was 26, as compared with 17, in the previous year. Two of these accidents were due to overwinding and one involved the loss of eight lives (see page 12). Another accident was due to the fall of a guide rope which was being fitted in a shaft and in this accident three persons were killed (see page 13).

Accidents on haulage roads were fewer. There were 20 such accidents, as compared with 30 in 1921.

There were five fatal explosions of firedamp causing twenty-one deaths. One of these occurred in a thin seam in a longwall face and caused the death of thirteen persons (see page 8). Another, which occurred in narrow gallery workings, caused the death of four persons (see page 10).

The number of accidents from explosives decreased from 14 in the previous year to 9 in 1922. Nine lives were lost. Most of these accidents were due to carelessness in the handling and use of gunpowder.

There were three accidents caused by electricity.

The Indian Electricity Rules which include a comprehensive code of rules regulating the use of electricity in mines were brought into operation on 31st July 1922. The Electric Inspector of Mines, after a close inspection of most of the electric plant in the provinces of Bengal and Bihar and Orissa, reported that many of the installations were on modern lines and required little or no alteration to bring them into compliance with the rules. In some of the older installations considerable improvements have been effected, mine owners generally being ready to comply with the new requirements.

There was one accident due to irruption of water into a mine. The accident occurred at a mine in the Jharia coalfield and one life was lost. It is becoming increasingly difficult to prevent coal mines, especially in the Jharia coalfield, from being flooded during the monsoons. The ground is everywhere broken up by subsidences and many of the entrances to mines are situated in positions which render them liable to inundation. Wherever it is practicable to do so mine owners erect protective works either on their own initiative or at the instigation of this Department and where adequate protection cannot be given all night work, and in many cases both night and day work, is stopped during the rains.

The death rate per thousand persons employed above and below ground was 1·06, while that of the preceding five years was 1·08. At coal mines only these figures were 1·13 and 1·18 and at mines other than coal 0·77 and 0·76. At all mines in the United Kingdom during the ten years ending with and including 1920 the average death rate per thousand persons employed underground was 1·36 as compared with 1·46 for all Indian mines.

The death rate per million tons raised at coal mines was 11·50 while that of the preceding five years was 11·12. At coal mines in the United Kingdon during the ten years ending with and including 1919 the death rate per million tons raised was 5·13.

Deaths occurring in each class of mines were as follows :—209 in coal mines, 7 in salt mines, 2 in wolfram mines, 3 in mica mines, 5 in tin mines, 8 in silver-lead mines, 5 in manganese mines, 1 in a gold mine and 3 in an iron mine.

Twenty-one persons lost their lives by explosions of gas, 57 by falls of roof, 65 by falls of side, 35 in shafts, 9 by explosives, 20 by haulage, 11 by other accidents underground, and 25 on the surface.

A list of these accidents appears in Appendix II, Table I. In addition to these there were 45 other accidents causing the death of 51 persons. These also appear in Appendix II, Table I, but are listed separately, reasons being given in each case for their exclusion from the statistical table.

Each fatal accident is described briefly in Appendix II, Table I, but the following are reported at greater length. The numbers refer to the numbers in the Appendix.

EXPLOSIONS OF FIREDAMP.

No. 1.—The Bengal Iron Company, Limited's Jeetpur coal mine.

This accident occurred in the workings of a pair of new shafts which had been sunk in virgin ground to a seam in which the presence of gas was unknown in the surrounding district. No. 1 shaft is 447 feet and No. 2 shaft 460 feet deep. They were connected by a straight gallery. On both sides of No. 1 Pit level galleries had been driven for a distance of about 500 feet. At a distance of 150 feet from the shaft, rise galleries had been driven a distance of about 220 feet. Drilling in all the galleries was being done by means of compressed air hammer drills. On the side of the pit in which the accident occurred, about six weeks before the accident, the rise gallery had been stopped and the air pipes removed for a distance of about 150 feet from the face in order to extend the pipe line in the levels. On the 23rd January a party consisting of one surveyor, one assistant surveyor and one chainman from the Department of Mines, and three colliery employees to act as chainmen, descended the mine for the purpose of making a survey in connection with a case under the Land Acquisition (Mines) Act. The overman of the colliery reported to the surveyor that the mine was in a safe condition. The surveying party went into the rise gallery and the dial was set up at a point about half-way up the gallery. Shortly afterwards one of the colliery chainmen was sent up the gallery with an open light. When the chainman had gone up some distance an ignition of gas occurred. The flame extended to the position of the dial. The colliery chainman was so severely burnt that he died 24 hours later, and the surveyor and another chainman also received severe burns.

In commenting on this accident it must be remembered that no indication of firedamp had been found in the mine up to the time of the accident and that so far as was known the seam did not give off firedamp. For these reasons the management was not held to have been culpably negligent. The overman stated that he

had examined the gallery that morning but admitted that he had just shown his lamp up to the face from a considerable distance away from it. It did not occur to him that there might be firedamp in the air and in any case he was not in a position to test for the gas as he did not possess a safety lamp. If he had gone further towards the face he would in all probability have ignited the gas and been burnt.

An inspection of the place was made on the day after the accident by an officer of the Department of Mines when no indication of firedamp was given on the reduced flame of the ordinary safety lamp. At another inspection on the 4th February, however, firedamp was detected at a point 150 feet from the face of the gallery. Obviously the gas had been slowly accumulating during the period between the two inspections, as had also undoubtedly been the case during the interval between the stoppage of the gallery and the accident.

While General Rule 4 (*a*) is perhaps not as explicit as it might be and while it would be an unnecessary hardship to insist on inspections with the safety lamp being made in every mine it may be pointed out that the rule would appear to require tests to be made for the presence of gas. The rule requires inspections to be made for the purpose of ascertaining the condition of the mine so far as the presence of gas, ventilation, etc., are concerned. That cannot be done properly without the aid of a safety lamp. To comply strictly therefore with General Rule 4 (*a*) tests for firedamp should be made by the competent person appointed for the purpose, whether firedamp is suspected to be present or not, as unless a test has been made, it is impossible to be certain that no firedamp is present in the air. The rule should be interpreted in this way in all new mines in the initial stages of development, particularly, as in this instance, where the seam is reached by shafts sunk through the measures.

No. 2.—The North Western Railway's Khost (Ghuz) coal mine.

This coal mine has been the scene of several accidents due to explosions of firedamp. An explosion in 1908 resulted in the death of 20 persons. Since then there have been three ignitions, one of which caused the death of two persons. In 1899 a fire, probably caused by an explosion of gas resulted in the loss of 47 lives. The seam in which the accident to be described occurred has an average thickness of about 2 feet and dips at an angle of 53°. It gives off firedamp and safety lamps are used in the mine. The method of working is modified longwall. At the time of the explosion a longwall face 25 feet wide was being carried upwards from No. 4 West Level (see Plan A). It had advanced to a distance of 90 feet above the level and 65 feet above the companion level or " kamani " as it is called locally. Following up the extraction of the coal the face was systematically timbered and packs consisting of a double row (3 feet wide) of bags of palm leaf matting filled with shale from the face were built. The packs were about 15 feet apart and carried as near to the face as the work would permit, usually from 4 to 10 feet. The space between the packs was partially filled with shale obtained in the working of the coal seam. Two roads, about 25 feet apart, were maintained through the goaf in continuation of the two galleries or " stentons " connecting the main and companion levels. The coal was passed through a sheet iron shoot into a tram standing in the level below. To meet the longwall face a dip gallery had been driven from the level above for a distance of about 50 feet. Owing to the emission of a small quantity of firedamp, however, the dip gallery was stopped about three weeks before the accident. About the same time inflammable gas was encountered in the longwall face, but was removed by means of a hand blowing-fan placed in the companion level (see enlarged part Plan A). The mine was ventilated naturally and the air current coming from the main level which was the intake, was conducted round the face by the packs into the companion level which formed the return airway. The hand blowing-fan was employed to assist the ventilation at the face and in particular to clear out accumulations of gas. Gas was detected on the longwall face on several subsequent occasions, and on each occasion cleared out, but for about a week before the explosion no gas was reported and the work went on without interruption.

On 9th March 1922, a day shift of about sixteen persons went to work in and about the longwall face. These consisted of a coal-cutter, a shoveller, timbermen and packmen, all of whom worked in or close to the face. There were also four

men employed alternately in working the hand fan. During the night a narrow drivage or *pugma* about 6 feet wide was commenced in the inner corner of the face, in preparation for a horizontal cut about 5 feet thick along the face which was the method of extraction employed. The *pugma* was driven about 3 feet during the night shift. At the commencement of the day shift the chargeman found a small quantity of gas in the *pugma*. He stopped the work and put up a canvas sheet between the end of the air pipe and the face. This was said to have cleared the gas and coal cutting was resumed until the *pugma* was driven up the full distance of about 5 feet. The cutting of the 5 feet slice in a level direction was then commenced. During the driving of the *pugma* the thickness of the seam had increased from 2 feet 6 inches to 4 feet. Shortly after midday the man in charge of the fan carried an air pipe to the face for the purpose of extension and returned for his tools. On the way down he passed four packmen taking up packs to extend the packwalls. Shortly after the packmen reached the face an explosion of firedamp occurred. The flame of the explosion was projected for about 80 feet from the face and severely burnt 16 persons, of whom 13 died.

A full inquiry into the accident showed that the ignition was, in all probability, caused by a defective safety lamp. The lamp was found hanging on a prop near the roof in the position shown in the section (Plan A). It was examined after the accident and it was found that amongst other defects the gauze was dirty, the glass was slack and the flame could be extinguished by blowing over the top of the glass, and that the lower asbestos ring was old and was not air-tight. Many of the other lamps in use at the colliery were in an unsatisfactory state of repair.

The accumulation of gas was presumed to have been due to a larger emission of gas than usual from the thickened coal which had just been reached, and to the partial blocking of the air passage by the packmen, timbermen and others who were at work at the time of the explosion. It was considered that the use of a blowing fan introduced a danger, as it would tend to produce an explosive mixture at the face instead of withdrawing the gas, as might have been possible if an exhausting fan had been used. The application of an exhausting fan would have been difficult however as a longer length of pipes would have been required and frequent realignment of the pipes would have had to be made. These difficulties probably rendered the arrangement of the fan for exhausting impracticable. Owing to the fact that the goaf between the packwalls was empty, there was considerable leakage of air through the packwalls, and this leakage reduced the ventilation at the face. The management were called upon to improve the ventilation of the mine and to provide a sufficient number of serviceable lamps.

The man in charge of the safety lamps at the colliery at the time of the accident was discharged.

No. 3.—The Kalipahari Coal Company, Limited's Damra coal mine.

This accident points once more to the necessity of using safety lamps in all unventilated main galleries in seams in which inflammable gas, although not normally present, has occasionally been met with. The main gallery in which the accident occurred had been inspected twice on the day of the accident, and tests with a safety lamp had shown no indications of the presence of firedamp. Open lights were used by the men working in the gallery. Firedamp had, however, apparently been slowly accumulating in the gallery throughout the day, as, late in the evening, an ignition was caused by an open light and one man was so severely burnt that he died in a few hours. Accidents of this kind occur from time to time and the obvious way to prevent them is to use only safety lamps in all advance galleries in which inflammable gas has been found.

No. 4.—The New Ghusick Coal Company's New Ghusick coal mine.

Two miners were working in an advance heading of small dimensions when one of them accidentally struck and broke the glass of his safety lamp with his pick. An ignition of firedamp followed and both miners received burns from which they died a few hours later. The seam gave off firedamp in small quantities and safety lamps were used throughout the mine.

The accident points to the necessity for improved ventilation in advance galleries. The use of safety lamps is insufficient unless the ventilation is ade-

quate to dilute and render harmless accumulations of gas. The adequate dilution of inflammable gas is provided for in General Rule 14 and to comply with this rule a current of air should be constantly circulated in all working places sufficient to prevent dangerous accumulations of gases.

No. 5.—The Bengal Coal Company, Limited's Parbelia coal mine.

The seam in which this accident occurred lies at a depth of about 1,500 feet from the surface. The mine is served by two shafts, and the workings at the time of the accident consisted of those shown on Plan B. The seam gives off firedamp and since the commencement safety lamps have been used throughout the mine. The accident occurred on the east side of the mine in the pair of narrow galleries marked A and shown enlarged on the plan. At the time, No. 1 pit was not being used for winding and the coal obtained from the left-hand narrow gallery at A was stacked on the side of the main level leading to No. 1 pit. The coal from the right hand narrow gallery was carried down to the level leading to No. 2 pit whence it was raised to the surface. On the morning of 5th July 1922 at about 7 A.M. six persons descended No. 2 pit and went to work in these narrow galleries. Two of them went into the left-hand gallery. In order to reach their working place they should have gone by way of the right-hand gallery but it is conjectured that instead of doing so they obtained access to the left-hand gallery by opening the brattice above the stopping at the foot of the pair of galleries. The other four persons sat down in the main upper level behind the stopping. At about 8 A.M. an explosion occurred at the face of the left-hand gallery and extended to where the four miners were sitting at the bottom of the right-hand gallery, a distance of 136 feet from the face. The two miners in the left-hand gallery were found dead at a point about 50 feet from the face. The other four were severely burnt and two of them died within a few days. After the explosion, a damaged safety lamp was found near the face in the left-hand narrow gallery. On examination it was found that there was a large hole in the gauze of the lamp. After a full inquiry it was concluded that this lamp had ignited an accumulation of firedamp near the face and that the flame had been propagated to the bottom of the narrow galleries by the fine coal dust that was present. A prosecution was instituted against the lamp cabin attendant who issued the defective lamp but the case was dismissed. The cause of the accumulation of firedamp in the gallery was held to have been partly due to the derangement of the brattice above the stopping at the foot of the galleries. This accident points to the following :—

(1) Wherever practicable, narrow galleries should be avoided in a seam which gives off firedamp. They retard the flow of air and are consequently more difficult to ventilate. After this accident the driving of narrow galleries was stopped forthwith at the colliery.

(2) In seams giving off firedamp in appreciable quantities, an inspection with a locked safety lamp should be made by a competent person of all advance galleries within two hours of the commencement of each shift, unless in the case of a shift immediately following on a previous one. Such an inspection was apparently not made on the occasion of this accident and if it had been made the accumulation of firedamp might have been detected and the accident avoided. At present General Rule 4 (*a*) does not require an inspection before each shift except when a mine has been unworked for more than 24 hours, but it is proposed to amend the rule so as to require an inspection before each shift and in addition inspections during the shift.

(3) A defective safety lamp is a grave source of danger in places where an accumulation of firedamp is likely to occur and strong action should be taken against any person issuing a damaged lamp for use underground. It is proposed also to stiffen the rules with respect to the issue of safety lamps.

FALLS OF ROOF.

No. 16.—Messrs. S. B. Raha & Sons' Godhur coal mine.

A pillar was in process of extraction in No. 12 seam which is 12 feet thick. About 9 feet of the seam is removed leaving 3 feet of coal next the roof. The

method of extracting the pillars was to take out the bottom 7 feet of coal propping the remaining 2 feet until it " weighted." The props were then withdrawn and the " top " coal allowed to fall. In this case, however, when the props had been withdrawn the top coal did not part easily and deceased and his companion proceeded to cut away some coal from the pillar side underneath in order to release the top coal. The block of coal which was 12 feet by 4 feet by 2 feet thick fell unexpectedly, however, killing deceased and injuring his companion.

The practice of carrying roof coal on props in pillar extraction has led to many accidents and, unless it is necessary to do so for the purpose of supporting a weak roof, it is a practice that cannot be too strongly condemned.

No. 17.—The North-West Coal Company, Limited's Ena coal mine.

A pillar next the goaf was in process of extraction. The seam is 12 feet thick but 2 feet of coal was left as a roof, the stone above being weak in some places. The position at the time of the accident is shown in plan C. A fence had been erected separating the working places in the pillar from the goaf. On the working side of the fence props had been set but on the goaf side the roof was unsupported. On the morning of the day on which the accident occurred the shift-sirdar instructed the timberman to set some props close to the fence. He had put up the props marked 1 and 2 on the plan and was measuring the length required for a third one when a block of the roof coal having an area of about 130 square feet and 2 feet thick, together with a part of the corner of the pillar, fell and killed him almost instantly.

The most important lesson to be learned from this accident is that in pillar extraction near the goaf the roof and sides contiguous to the working places should be regularly examined and supported if necessary. A fence should be erected to separate the working places from the goaf, but if work is proceeding close to the fence, as was the case where this accident occurred, the roof and sides beyond the fence should be examined just as if they were part of the working place. If an examination had been made in this case, the weakness of the roof would in all probability have been realised and timber would have been put in to support it. The presence of a small fault, the direction of the cleat of the coal and the open end of the goaf (see plan) all contributed to the accident, and an examination beyond the fence would have made it clear that if a fall of roof occurred it might extend into the working place even though that was timbered.

FALLS OF SIDE.

No. 61.—The Kinuri Coal Company, Limited's Kinuri coal mine.

This accident occurred in a shaft which had been deepened to prove a lower seam. The shaft was 16 feet diameter and 237 feet deep. The dressing of the sides towards the bottom had been very roughly done. Considerable trouble had been experienced from the percolation of water from old goafed workings to the rise of the shaft. The water contained iron and a deposit of oxide of iron covered the shaft sides below the stone-head. This deposit to some extent concealed the condition of the shaft sides. During 1921 the shaft was water-logged but by the end of January the water had been lowered sufficiently to allow air to pass through the shaft. On the 6th February a fitter who was in the shaft bottom for the purpose of repairing a pump was struck on the head by a piece of stone weighing 78 lb. and killed instantly. The shaft had been regularly examined and the last examination was on the day before the accident.

The sides of unwalled shafts which are exposed to changing conditions should be examined regularly with great care. A shaft which has been water-logged should be very carefully examined after it has been dewatered. During the examination the side should be tested wherever it appears to be unsound and all stones which do not ring hard should be removed. The same remarks apply to shafts in which steam pumps are installed. In such circumstances rapid changes of temperature often occur and the consequent expansion and contraction may loosen stones in the shaft sides which might otherwise have remained firm.

No. 70.—The Busserya Coal Company, Limited's Busserya coal mine.

A miner passed through a fence and robbed coal from a portion of a quarry which had been declared to be dangerous. This practice is a frequent source of accidents and it is a difficult one to prevent. It was proved that the place at which the accident occurred had been worked in a dangerous manner for a considerable time before it was fenced off, the coal having been undercut over a long length of face leaving overburden which had collapsed at several places and was in danger of falling at others. It was also shown that no reports on inspections of the quarry had been made. The manager was prosecuted and fined Rs. 100 or imprisonment for one month for violation of General Rule 4(*b*).

No. 75.—The Gopalichuck Coal Company, Limited's Gopalichuck coal mine.

This accident occurred in a quarry where the coal seam and the strata above it were of a soft and friable nature. The coal had been undercut and a part of it and some of the super-incumbent strata fell on a miner and killed him.

The method of working practised at this quarry is a fruitful source of accidents. Where the overlying rocks are of a soft nature, the removal of the overburden should invariably precede the extraction of the coal. Indeed this method is the safest even where the overlying strata are hard. As the outcome of the accident the agent and assistant manager were prosecuted for breach of General Rule 3 and fined Rs. 100 and Rs. 200, respectively. The manager, who had been on leave for some time and resumed duty on the day previous to that on which the accident occurred, was also prosecuted but was acquitted.

No. 105.—The Tata Iron and Steel Company, Limited's Jamadoba coal mine.

A new incline was being cut in a virgin part of the property. The strata through which the incline was passing consisted of a covering of clayey material, about 6 feet thick and fairly well consolidated, over a series of thin bands of friable sandstone. At the time of the accident the excavation was 66 feet long, 12 feet wide and about 17 feet deep at the deepest part. Five persons were at work in the cutting when one side of it, to the extent of about 30 tons of débris, collapsed, burying three persons completely and the other two partially. The two partially buried workmen managed to extricate themselves but the other three had to be dug out, when they were found to be dead. The strata in the vicinity of the cutting are highly inclined and the collapse of the side revealed a" slickenside" dipping into the cutting at a high inclination. In horizontal strata of the same nature the danger of collapse would probably have been slight.

The lesson taught by this accident is that where the strata are of a soft nature and dip into the side of the cutting, the weak side or sides should either be sloped back at a safe angle or temporarily secured by timber until a permanent brick or stone arching or walling has been built.

IN SHAFTS (OVERWINDING).

No. 115.—The Bengal Coal Company, Limited's Sodepur coal mine.

A cage containing sixteen persons was being lowered down a shaft, 887 feet in depth. When the cage was nearing the bottom of the shaft the engineman lost control of the engine and the cage was dashed with such violence on the bottom that all the occupants sustained serious injuries and eight of them died subsequently. The ascending cage was caught on the detaching hook, the rope was released and seven spare coils on the drum were unwound before the engine was brought to a standstill by means of the steam brake. It was considered that the accident was due to forgetfulness on the part of the engineman who was operating the winding engine. It was proved that the brakes were ample and that there was no defect in the winding engine which could have been the cause of the accident. Apparently the engineman had carelessly allowed his mind to stray from the work in hand and had not realised that it was time to check the speed of the engine until the crash of the cage in the headgear brought him to his senses. He did not leave his post, and was found by the manager standing beside the engine with the reversing lever in the mid-position, the steam throttle shut and the steam brake applied

This accident points to the necessity for attaching devices for the prevention of overwinding to steam winding engines installed at deep shafts. The difficulties of winding increase with the depth of the shaft and in such cases accidents due to neglect on the part of the engineman or defective brakes can best be prevented by a satisfactory form of overwinding preventer in addition to the detaching hook which is a familiar feature at coal mine shafts in India.

No. 116.—The Equitable Coal Company, Limited's Hariladih coal mine.

This accident was also due to overwinding and it illustrates the undesirability of long hours of work on the part of persons in charge of winding machinery. Two workmen were being lowered in a shaft, when the engineman lost control of the engine, and the descending cage struck the bottom of the shaft with such force that one of the men sustained severe injuries from which he died the next day.

At the inquiry which was held, it transpired that the engineman had been on continuous duty for twenty-one hours owing to the absence of two other enginemen, one of whom should have relieved him at the end of eight hours. The accident appeared to have been due to forgetfulness on the part of the engineman, and in consideration of the length of the period during which he had been on duty he was not considered to be blameworthy. Proper arrangements had not been made for relieving the engineman at the end of his shift. It was considered that it would be difficult to prove a clear violation of any rule under the Indian Mines Act and instead of a prosecution, fines were imposed by the management on the persons held to be in any way responsible for the accident.

A long period of work on such responsible duty as that of having charge of a winding engine is sure to lead to accidents and the official of the colliery who has charge of the enginemen should be held personally responsible for seeing that such arrangements are made as will prevent any engineman being on duty beyond a reasonable period.

IN SHAFTS (ROPES AND CHAINS BREAKING).

No. 117.—The Tata Iron and Steel Company, Limited's Malkera coal mine.

The scene of this accident was in the sump of a pit, 364 feet deep. Four steel guide ropes were being fitted in the shaft. The method of fitting them was as follows :—The guide ropes consisted of a solid stranded rope of seven wires the diameter of the rope being 1⅛ inch. The piece of rope used was about 1,400 feet long, more than sufficient for three guides but not enough for four. One end of this rope was clamped to the end of the winding rope and the whole coiled on the winding drum. The other end of the guide rope was then taken over the headgear pulley and lowered down the shaft. At the shaft bottom the guide rope passed between two girders set into the shaft sides and was clamped underneath. When the clamps had been satisfactorily secured a signal was given to the banksman—who repeated it to the engineman—to pull up the slack rope, the winding engine being used for the purpose. The rope was then secured by a screw-clamp in the headgear and cut off. Plan D shows details of the method of clamping the guide rope at both ends. Three guides were successfully installed in this way. For the remaining guide, another piece of the same rope, just sufficient in length for one guide, was obtained, clamped to the winding rope, wound on the winding drum and then lowered down the shaft in precisely the same way as before. In this case, however, when one end of the guide was at the pit bottom, the other end, clamped to the winding rope, was midway between the headgear pulley and the winding drum. Thus during the operation of taking up the slack of the guide rope the whole pull due to the weight of the rope was on the clamps holding the two ropes together. This was not so when the other three guides had been installed since in those cases part of the guide rope was coiled on the winding drum, so that the clamps binding the two ropes had to bear only a part of the pull. None of the engineering staff of the colliery supervising the operations appeared to have noticed that there was considerably more risk of the clamps slipping in the case of the last guide to be installed than in the case of the other three. After clamping the fourth guide in the pit bottom, the operation of taking up the slack rope commenced. At that time eight men whose work was to fix the shaft bottom

clamps were in the shaft bottom. Apparently lulled into a false sense of security by the freedom from accident with which the other three guides had been installed these men did not come out of the shaft and stand clear in the inset levels as they ought to have done. After the rope had been raised slightly the guide rope slipped through the clamps binding it to the winding rope and the whole of the guide, coil upon coil, fell to the shaft bottom killing three of the workmen and injuring the other five more or less severely. The clamps were not properly designed for the purpose for which they were used and there was doubt as to their tightness.

This accident illustrates once more the careless manner in which mining plant and machinery are frequently installed. The clamps used to bind the guide and winding ropes were not adequate for the purpose, and it ought to have been evident to the supervising staff that there was a grave risk of the guide rope slipping through the clamp. It appeared that the person in charge of the workmen in the shaft bottom ordered them to come out before tightening operations commenced but that they refused to do so saying that no accident could happen. It was made clear, however, at the inquiry which was held into the occurrence that no one realised that there was a grave risk of the guide rope slipping and falling down the pit and that, while the men should have come out of the shaft bottom during tightening operations on all occasions, it was absolutely imperative that they should do so during the tightening of the last guide rope. At the instigation of the Department of Mines the engineering staff of the colliery was strongly censured by the management. The installation of guide ropes in a shaft is an operation which requires careful organization and close supervision and at every stage of the work definite instructions should be given by the engineer-in-charge in order to ensure the safety of the workmen.

No. 119.—The Ghusick and Muslia Collieries, Limited's Ghusick coal mine.

This accident occurred in an upcast shaft, 450 feet deep. A fitter and his assistant had been repairing a steam joint near the bottom of the shaft from the top of the cage. The cage was lowered to the shaft bottom and the assistant went away for some bolts that were required, the fitter remaining on the top of the cage. While the assistant was away one of the guide ropes broke at the clamps in the headgear and falling down the shaft struck the fitter and injured him so that he died shortly afterwards. It was found that the rope was badly corroded where it had broken. The clamps were also badly weakened by corrosion. This part of the guide rope had apparently seldom or never been examined as if an examination had been made the extent of the corrosion must have been noticed. The weekly examination of the guide ropes was the duty of the fitter who was killed.

The corrosion was probably due to the effect of heated gases from the mine together with the ordinary process of rusting. The frequent application of grease would have greatly retarded corrosive action. The weekly examination of guide ropes should include the parts of the ropes in the headgear and the clamps holding them. It is good practice also to shift the point of suspension of the guide ropes at regular intervals.

EXPLOSIVES.

No. 143.—The Samla Govindpur Collieries, Limited's Baidyanathpur coal mine.

Accidents through the careless or improper handling of gunpowder are of frequent occurrence in Indian mines. A miner was supplied with ten pounds of gunpowder to be manufactured into cartridges for use underground. Instead of making the cartridges in the special room provided at the colliery he took the gunpowder to his home. Whilst he and two other miners were making the cartridges a spark from a pipe or a fire ignited the gunpowder which exploded and burnt them severely. The miner who received the powder died of his injuries.

There are no rules under the Indian Mines Act dealing with the handling of explosives and the manufacture of gunpowder into cartridges on the surface, but it is hoped that this omission will be remedied when the rules are amended. Several of the larger coal companies have, however, framed and enforced bye-laws of their own for the safe manufacture and distribution of gunpowder. These bye-laws have worked satisfactorily.

HAULAGE.

No. 155.—The Kirkend Coal Company's Kirkend coal mine.

This accident occurred at the bottom of a main haulage road, terminating in two loading sidings. The road dipped at a gradient of about 1 in 6. In one of the sidings there was a set of twelve loaded tubs, while in the other there were seventeen empty tubs (see Plan E). Both sets rested on strong buffers. The clear space between the two sets was about eighteen inches wide. Coal was being loaded from places directly to the dip of the sidings, and the loaders passed up the clear space between the two sets in order to load the tubs allotted to them. When the accident occurred there were ten persons between the sets, their positions being shown by crosses. Practically all the tubs contained some coal, some near the top being nearly loaded. According to the evidence taken at the inquiry it appeared that one of the loaders threw a large piece of coal into the sixth tub from the bottom which was nearly empty. The shock derailed the tub and the whole train was set in motion downhill, with the result that seven of the tubs were derailed and pushed into the positions shown in the plan. The line was not very solidly laid at that point and in the level gallery into which some of the tubs were forced, the floor coal was cut away so that the tubs near the bottom of the set fell into the excavation. Nine of the loaders escaped but one was caught between the seventh tub of the set and one of the loaded tubs in the other siding and so severely crushed that he died soon after he had been released.

The practice of loading tubs on a gradient is a dangerous one, especially if there is another set standing alongside and the loaders have to pass between the sets or between the side of the road and the tubs.

Unless the line is practically level only a few tubs should be loaded at a time and there should be ample room for the loaders to escape in the event of a disturbance such as occurred in this accident. Incidentally, it should be pointed out that where loading is being done in a situation similar to that which was the scene of this accident, a runaway switch or stop-block should be placed on the line at some distance above the siding so as to safeguard the loaders from a runaway. Wherever possible loading sidings should be on the level and clear of the straight part of the haulage road.

ELECTRICITY.

No. 191.—The Aldih Coal Company, Limited's Aldih coal mine.

This accident is a particularly clear example of the importance of efficient earthing of underground electrical apparatus. Current was switched on to a dip pump installation while a gang of men who had completed its removal to a new situation were handling the cable supplying the apparatus. The armour of the cable and the metal in connection therewith had become electrically charged by reason, it is supposed, of a blown fuse wire having fallen and made contact with a metal stud within a fuse-box which formed part of the installation. All the men received a shock and in the case of an electric *mistri* the shock proved fatal. The fuse-box which was suspected to have been defective had been in use in another place and was not examined when re-installed.

Assuming the cable armour and other metal to have become charged in the manner supposed, the accident would have been prevented by better design and construction of the fuse-box or by examination thereof before the current was switched on. No serious consequences could have resulted, however, had not the earthing of the apparatus been rendered inefficient by the existence of numerous improperly made and loose earth connections between the installation and the surface earthing system.

MISCELLANEOUS ON SURFACE.

No. 205.—The Central Kurkend Coal Company, Limited's Central Kurkend coal mine.

The overburden was being removed from a seam of coal and in the earth cutting stacks were left for the purpose of checking the measurement of quantities cut. One of these stacks, about 9 feet high, which had been partly undercut, collapsed.

and fell on a workman. He was severely injured and died about three weeks afterwards. Where it is necessary to leave such stacks the height of them should be kept as small as possible by reduction at intervals. They should be regularly inspected and if they show signs of collapse they should be removed.

Section IV.—Prosecutions and Additions to the Act. Prosecutions.

Judgment was given in the following prosecutions during the year. Unless otherwise stated "rule" means a rule under Notification No. 864-68-20, dated the 10th March 1904, being rules for the working of coal mines.

The owner of J. Boisogomoff's Dobrana coal mine was prosecuted under Rule 19 for not fencing a disused shaft and under rule 3 of Bengal Government Notification No. 3970-Com., dated the 28th August 1918, for not keeping in repair a gate at the entrance to an incline. He was acquitted.

The owners and the manager of Patel Brothers and Company's Kalimati coal mine were prosecuted under rule 7. They were fined Rs. 100 and Rs. 200, respectively.

The owners of B. B. Trigunait's Khas Angarpathra coal mine were prosecuted for not complying with a notice under section 15(1) of the Indian Mines Act, requiring them to safeguard a public road. They were acquitted.

The owners of the National Coal Company's Angarpathra coal mine were prosecuted for not complying with a notice under section 15(1) of the Indian Mines Act, requiring them to safeguard a public road. They were fined Rs. 200.

The owner and manager of the East Bagdiggi Coal Company's East Bagdiggi coal mine were prosecuted under Rules 3, 4 and 17. The owner was fined Rs. 15. The manager could not be traced and the case against him was withdrawn.

The owner and manager of Trinoyoni Debi and others' Mangalpur (Upper Bungalow) coal mine were prosecuted under Rules 1, 3 and 9. The owner was discharged and the manager fined Rs. 20.

The owners of J. N. Das and Company's West Baraboni coal mine were prosecuted under Rule 47, read with section 13(1) of the Indian Mines Act, for not appointing a qualified manager. They were fined Rs. 15.

The owner and manager of D. Marwari's Mouthdih coal mine were prosecuted under Rules 3, 7 and 19. The manager was fined Rs. 50. The case against the owner was dismissed.

The owner of R. N. Banerji and others' Kalikapur coal mine was prosecuted under Rules 1, 3 and 7. He was fined Rs. 75 but was acquitted on appeal.

The manager of R. N. Mondal and Company's New Nayadanga coal mine was prosecuted under Rules 3 and 7. He was fined Rs. 40.

The owner of W. C. Bhattacharji's Egarcoor coal mine was prosecuted under Rule 47, read with section 13(1) for not appointing a qualified manager. He was fined Rs. 15.

The agent of the Model Brindabanpur Coal Company's Brindabanpur Model coal mine and B. Gupta and S. Tarafdar's Surhid coal mine was prosecuted under Rule 46, read with section 13(1) of the Indian Mines Act, for not appointing a qualified manager. He was fined Rs. 50.

The agent and manager of Nistarini Dassi's Jamehari coal mine were prosecuted under Rules 3 and 7. They were fined Rs. 100 each.

The owner, agent and manager of the Dangaich Coal Company's Tundoo coal mine were prosecuted under Rules 7 and 13 and Rule 3 of Government of Bihar and Orissa Notification No. 11761-M, dated the 23rd August 1918, for not fencing disused workings, for not providing a secure case or canister for explosives in the mine and for not keeping in repair "gates" at the entrance to the inclines. The owner and agent (one person) and the manager were fined Rs. 75 each.

The agent, manager and assistant manager of the Gopalichuck Coal Company, Limited's Gopalichuck (Head) coal mine were prosecuted under Rule 3. The agent and assistant manager were fined Rs. 100 and Rs. 200, respectively. The manager was acquitted.

The manager of the Busserya Coal Company, Limited's Busserya coal mine was prosecuted under Rule 4. He was fined Rs. 100.

The owner and manager (one person) of Radha Gobinda Sircar's Hirakund coal mine were prosecuted under Rules 7 and 22 and Rule 2 of Government of Bihar and Orissa Notification No. 11761-M, dated the 23rd August 1918, for not fencing a disused gallery, for not providing at the mine ambulances or stretchers with splints and bandages and for not keeping an accurate register of persons going underground. He was fined Rs. 10 under each count.

The owner of Pir Mohanlal's Muraidih (Locobad) coal mine was prosecuted under section 16 of the Indian Mines Act for not reporting the opening of the mine: The complaint was dismissed.

The owners (two) of Abdur Sattar and Abdur Rahim Khan's Brindabanpur coal mine were prosecuted under section 13(1) of the Indian Mines Act, for not appointing a qualified manager. They were fined Rs. 200 or Rs. 100 each.

The owner and manager of J. P. Lalla's South Barora coal mine were prosecuted under Rules 3, 7 and 19. They were fined Rs. 150 each.

The owner and manager of D. P. Verma and Son's Pirorgoria coal mine were prosecuted under Rules 3 and 7 and Rule 3 of Government of Bihar and Orissa Notification No. 11761-M, dated the 23rd August 1918, for not keeping working places secure, for not fencing disused workings and for not keeping a gate at the entrance to an incline. They were fined Rs. 75 and Rs. 150 respectively.

The owner and manager of Nauren Singh's Bhutdoba coal mine were prosecuted under Rules 2, 19 and 20. They were fined Rs. 25 each.

The agent of the New Moheshpur Coal Company's New Moheshpur coal mine was prosecuted under Rule 19. He was fined Rs. 30.

The agent and manager of P. K. Chatterjee and Brothers' Jotejanaki coal mine were prosecuted under Rule 7 and section 15(2) of the Indian Mines Act, for not fencing disused galleries and for disobeying an order prohibiting the employment of women and children underground. The agent was fined Rs. 40 and the manager was acquitted.

The owner of L. Newton's Newton Pench coal mine was prosecuted under Rule 8 for not reporting the occurrence of a serious accident at the mine. He was fined Rs. 30.

Twenty-four prosecutions were instituted for failure to submit annual returns for the year 1921 within the prescribed date. In fourteen cases fines aggregating Rs. 375 were imposed; eight cases were withdrawn; in one case the accused could not be traced and in one case the accused died.

Information was received of the following prosecutions instituted by colliery officials against their subordinates under Special Rules made under section 21 of the Act:—

An overman and a sirdar of the Jamehari coal mine belonging to Nistarini Dassi were prosecuted under Rules 38, 40 and 41 for failing to see that sufficient supplies of timber and other appliances were kept at the mine and failing to report a deficiency therein; for not taking due precaution in the execution of dangerous operations and not fencing the entrance to disused workings; and for failing to see that the roof and sides of workings were kept secure. They were fined Rs. 5 each.

The manager of the Burrakur Coal Company, Limited's Charanpur coal mine prosecuted a fireman under Rules 64—67 for neglecting his duties. The case was subsequently withdrawn.

The manager of the Churulia Coal Company, Limited's Churulia coal mine prosecuted a banksman under Rule 78 for failing to close a stop-block and opening the runaway switch in a haulage incline. His negligence resulted in a fatal accident. He was fined Rs. 25.

The manager of P. K. Chatterjee and Brothers' Jotejanaki coal mine prosecuted a sirdar for violation of Rules 39 and 40 for not maintaining fences in good condition and not taking due precautions in dangerous operations. The case was dismissed owing to the absence of the complainant.

The manager of the Pench River Coal Company, Limited's Eklehra coal mine prosecuted an engineer under Rule 9 for being in a state of intoxication while in charge of boilers. He was fined Rs. 20.

The manager of the Bengal Coal Company, Limited's Parbelia coal mine prosecuted the lamp cabin attendant for breach of Rule 5 in that he issued a damaged safety lamp for use in the mine. The case was dismissed.

The manager of P. Mukerhji and Company's New Peeptatand coal mine prosecuted a fireman under Rule 5 for leaving unattended the boilers while under steam. The accused absconded and could not be traced.

The manager of D. N. Ghosh and Brother's Tetturiya coal mine prosecuted a fitter under Rule 4 for absenting himself without leave. He was fined Rs. 15.

The manager of the Burrakur Coal Company, Limited's Joba coal mine prosecuted a fireman under Rule 4 for absenting himself without permission. The case was withdrawn as the accused absconded and could not be traced.

A brakesman at the Ledo Valley colliery belonging to the Assam Railways and Trading Company, Limited, was prosecuted under Rule 71 of the Special Rules in force at the mines belonging to this Company for not causing a stop-block to be in position on a self-acting haulage road. He was fined Rs. 50 but the conviction was quashed on revision.

ADDITIONS TO THE ACT.

The rules published with the notification of the Government of India in the Department of Commerce and Industry, No. 11793-103, dated the 30th December 1908, were amended in Notification No. M-498, dated the 29th June 1922, which is reproduced in Appendix IV, Statement No. 8.

During the year Special Rules, under section 21 of the Act, were established at 58 coal mines. Special Rules have now been established at 665 coal mines and 40 manganese mines.

INDIAN MINES ACT, 1923.

The Indian Mines Act, 1923 (Act No. IV, 1923) which received the assent of the Governor-General on the 23rd February 1923, and was published in the *Gazette of India* on March 3rd, 1923, is given in Appendix IV, Statement No. 9, to this report.

It may be mentioned that the Government of India are taking advantage of the opportunity presented by the enactment of the Indian Mines Act, 1923, to revise the regulations relating to the safety of mines and of persons engaged in mining. The new regulations will not come into force until the 1st July 1924. In the meantime, they are taking steps to ensure that the mine officials responsible for the regular inspection of the roads and working places in mines and for testing for inflammable and other gases shall be properly qualified persons. They have also, following the practice in other countries, appointed a Committee to enquire into the coal dust danger and to make recommendations as to the regulations to be enforced in order to minimize the risk of coal-dust accidents in future.

Section V.—General Remarks.

HEALTH AND SANITATION.

The Asansol Mines Board of Health held ten ordinary meetings and five special meetings during the year. Dr. Tomb, the Chief Sanitary Officer of the Board, reported that there were 351 cases of cholera with 169 deaths and 52 cases of small-pox with no deaths during the year, as compared with 1,250 cases of cholera with 617 deaths and 74 cases of small-pox with 10 deaths during the previous year. No other disease was epidemic during the year. The health of the mining community was extremely good during the year.

The Board's anti-malarial staff made a complete mosquito and malarial survey of the Settlement. The investigation into the existence of hookworm infection was completed during the year. The total number of persons examined for hookworm was 5,689. The percentage of infection found in collieries was 68·85 per cent.,

in villages 37·09 per cent. and in municipalities 18·56 per cent. The percentage of mines found infected was 83·20. The average number of worms found per infected individual in collieries was 21, in villages 5 and in municipalities 3.

The education of the children in lower and upper primary schools of the Settlement in Elementary Hygiene was continued and highly satisfactory results have been secured.

The Jharia Mines Board of Health held fourteen ordinary meetings and seven special meetings during the year. Dr. G. W. Thompson was Medical Officer of Health during the whole period. Dr. A. G. Wright was appointed as Assistant Medical Officer of Health and joined in the month of May.

The bye-laws under the Bihar and Orissa Mining Settlements Act, 1920, were published in the local gazette in the month of March and became operative from that date. As a result of the powers conferred under these bye-laws it is anticipated that improvements in housing and matters generally affecting the public health will show a continuous progress towards betterment.

There were 279 cases of cholera with 79 deaths and 414 cases of small-pox with 10 deaths, as compared with 777 cases of cholera with 314 deaths and 207 cases of small-pox with 3 deaths in the previous year. The general health of the mining community was good.

The rainfall at Jealgora in the Jharia coalfield was 67·9 inches and at the Jharia Water Works near Topchanchi it was 66·09 inches. In the Raniganj coalfield the rainfall near Dishergarh was 35·24 inches, while at Kulti about 4 miles from Dishergarh it was 84·01 inches. In the Giridih coalfield it was 64·77 inches. These figures may be compared with 44·65 at Jealgora, 53·77 at Topchanchi, 41·77 at Dishergarh, 63·25 at Kulti and 31·68 at Giridih during 1921.

MINING EDUCATION.

The Principal of the Bengal Engineering College has reported that in the examination for the Diploma in the principles of mining held at the end of the college course in March 1922, of the thirteen students who appeared at the examination eleven were granted Diplomas. In the junior course, 27 were enrolled at the beginning of the session, eighteen sat for examination, and fifteen qualified for promotion to the senior course. Twenty-six students entered the preliminary or preparatory class on the mining side, and of these eighteen were promoted.

The annual mining camp was pitched in November and December 1922 at Giridih on a site near the East Indian Railway Company's colliery office. The usual courses of practical work were undertaken and visits of inspection paid to various plants and appliances of technical interest in the vicinity. The total number of students in the camp was 47, of whom 11 were special survey students.

The Mining Education Advisory Board held four meetings during the year. At the commencement of the session of 1921-22 the new scheme of instruction comprising a three year course was put into operation in Bihar and Orissa and Mr. Griffith Jones, the lecturer, and Babu N. N. Sen, the Assistant lecturer, delivered lectures in the first and second year courses at the Jharia and Sijua centres. In Bengal the lectures were continued according to the old syllabus and Mr. David Jones was appointed part time lecturer by the Board at the different centres in the coalfield.

The sessional examination under the old syllabus was held in May, the examiners being Mr. H. Lancaster, Inspector of Mines in India, and Mr. E. H. Roberton, Professor of Mining, Bengal Engineering College. Of the 100 candidates who qualified to sit for examination 49 presented themselves for examination and 31 were successful. As a result of the examination Special Mining Scholarships, tenable at the Bengal Engineering College, were awarded to Babus Haridas Mukherji, Benoy Krishna Chandra, Phani Bhusan Banerjee and Heramba Kumar Roy.

In September 1922, the Government of Bengal sanctioned the new scheme of instruction of a three year course but as this was too late to allow of the introduction of the new course in 1922-23, arrangements are being made for the appoint-

ment of an instructor so as to commence the lectures under the new scheme from September 1923.

The construction of new lecture halls at the different centres has not yet been completed but they are expected to be completed by the end of the current financial year.

In the Jharia coalfield at the commencement of the 1922-23 session the full three years course was instituted. The numbers enrolled were as follows :—first year 91, second year 90 and third year 53. Equipment has now been provided for practical instruction in Chemistry, Physics, Mine Gases and Gas-testing, Drawing and Surveying. The work has been hampered to some extent by the lack of accommodation but it is hoped that the new lecture halls will be available at the commencement of next session.

Babu Indu Gopal Banerjee delivered lectures in Bengali in the Raniganj coalfield.

Courses of lectures in Hindi to overmen and sirdars were delivered at three centres in the Jharia coalfield by Babu S. N. Bhattacharyya. The lectures were well attended. A scheme for the extension of those vernacular lectures was approved by the Government of Bihar and Orissa and arrangements have been made to commence classes at six centres. A feature of the scheme is the giving of practical demonstrations in the mine.

BOARD OF EXAMINERS FOR COAL MINE MANAGERS' CERTIFICATES.

The personnel of the Board underwent a change towards the middle of the year. Mr. F. Owen, on leaving India on retirement, resigned his membership with effect from the 10th May 1922. He was succeeded by Mr. J. Mackie. Six meetings were held during the year.

Thirteen first class certificates and one second class certificate of competency were granted in lieu of British certificates. One duplicate second class certificate of competency was granted during the year.

At the examinations for colliery managers' certificates of competency held at Dhanbad on the 13th, 14th and 15th and 20th, 21st and 22nd February 1922, ninety-eight candidates sat for first class and one hundred and sixty-nine for second class certificates. Certificates of competency were granted to seventeen first class and thirty-eight second class candidates.

The examiners for the first class examination were Messrs. H. M. Tarlton and J. Wilson and for the second class examination Messrs. W. Weir and R. Purdy. Messrs. H. Lancaster and D. Penman, Inspectors of Mines in India, acted as official examiners and secretary and assistant secretary, respectively.

At a meeting of the Board of Examiners held on the 4th May 1922 it was decided that, commencing from 1923, the questions set at the annual examinations should be published in the Annual Report of the Chief Inspector of Mines.

The regulations for the examinations were revised. The revised regulations came into force on 1st January 1923 and are reproduced in Appendix IV, Statement No. 7.

MINING BOARDS IN BENGAL, BIHAR AND ORISSA AND THE CENTRAL PROVINCES.

The Bengal Mining Board held two meetings during the year. The following matters were considered by the Board :—(*a*) The provisions of the Bill to amend the Indian Mines Act, 1901 ; (*b*) The provisions of the Workmen's Compensation Bill. Mr. Graham was a non-official member of the Board throughout the year. Mr. Glen George, the other non-official member, resigned and was succeeded by Mr. J. B. Wardlaw from the 5th August 1922.

The Bihar and Orissa Mining Board held one meeting during the year. The draft bill to amend the Indian Mines Act, 1901, was considered in detail. The non-official members were Messrs. R. G. M. Bathgate and J. Mackie.

There were no meetings of the Central Provinces Mining Board during the year.

MINING AND GEOLOGICAL INSTITUTE OF INDIA.

The total membership at the end of the year, including subscribers, was 329. At the annual meeting and at three ordinary meetings papers were read and discussed. Two field excursions were made, one in the Jharia coalfield and the other in the Raniganj coalfield with a view to investigating the losses in coal due to fire collapse, and inundation. A visit was also paid to Saltore colliery in the Raniganj field. A lecture illustrated by numerous lantern slides was delivered at Asansol by Dr. A. M. Heron on the Mount Everest expedition. In addition to the above meetings an extraordinary general meeting was held when a new rule affording privileges to members retiring out of India was passed, by which such members may compound all future subscriptions on payment of Rs. 50.

Three parts of the Transactions were published.

Two meetings were held in the Central Provinces and Berar Branch, at one of which Dr. L. L. Fermor delivered a lecture illustrated by lantern slides on the manganese deposits of India.

The Government prize for the best paper accepted during the year for publication was awarded to Dr. L. Dudley Stamp for his paper entitled the "Geology of part of the Pondaung Range, Burma." The writer of this paper was also awarded the Institute's gold medal. The silver medal was awarded to Mr. D. Penman for his paper on "The use and Scope of Breathing Apparatus in Indian Mining." No award was made of the bronze medal.

The headquarters of the Institute has lately been removed to 27, Chowringhee, Calcutta.

THE ASSOCIATION OF COLLIERY MANAGERS IN INDIA.

The Association has been affiliated to the National Association of Colliery Managers in Great Britain. The business considered by the Council during the year included the following subjects :—(*a*) Standard agreements, (*b*) Superannuation, (*c*) Permits, (*d*) Proposed registration of winding enginemen and other persons in charge of machinery, (*e*) The Indian Mines Act, (*f*) The Electricity Act, (*g*) Mining lectures in the Raniganj coalfield, (*h*) Apprentice mining students, (*i*) The welfare of women mine workers.

An interesting visit took place to Jealgora where coal-cutting machines were seen in operation.

LAND ACQUISITION (MINES) ACT, 1885.

The number of original cases disposed of altogether at the end of 1922 stood at 464, twenty-three of which were cases disposed of during the year.

REGISTER OF APPLICANTS FOR EMPLOYMENT HOLDING FIRST OR SECOND CLASS COLLIERY MANAGERS' CERTIFICATES.

Numerous applications for employment in coal mines are received in the office of the Chief Inspector of Mines. For the convenience of mineowners and managers a register of the names of applicants holding first or second class colliery managers' certificates has been opened in the Chief Inspector's office, and may be inspected on request.

OFFICIAL DUTIES, 1922.

Mr. R. R. Simpson was Chief Inspector of Mines throughout the year.

Mr. H. Lancaster was Inspector of Mines, No. 2 Circle, up to 17th June 1922, when he was permitted to resign his appointment.

Mr. D. Penman was Inspector of Mines, No. 1 Circle, throughout the year.

Mr. J. H. Lang was Junior Inspector of Mines up to 17th June, after which date until the end of the year he officiated as Inspector of Mines, No. 2 Circle.

Mr. F. B. Kerridge was appointed Electric Inspector of Mines on 30th April 1922.

Mr. W. H. Goldsworthy was Junior Inspector of Mines up to 16th September when he was permitted to resign his appointment.

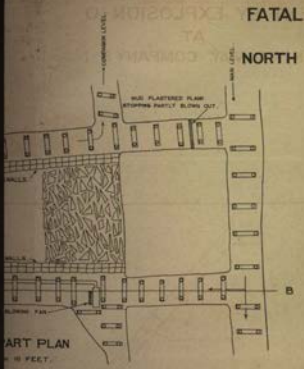
Messrs. G. S. Cameron, W. Kirby and H. R. Tallis were Junior Inspectors of Mines throughout the year.

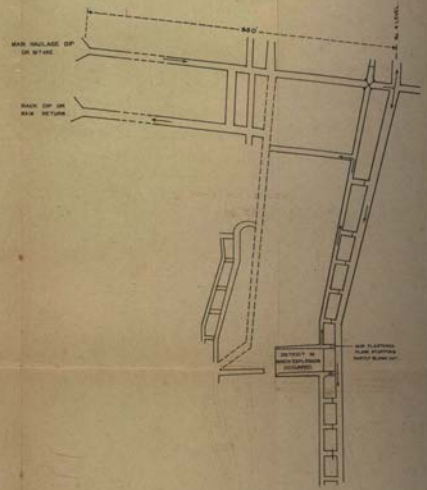
I have the honour to be,
SIR,
Your most obedient servant,

D. PENMAN,

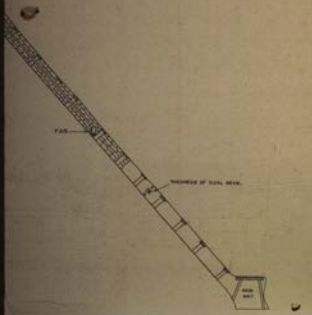
Offg. Chief Inspector of Mines in India.

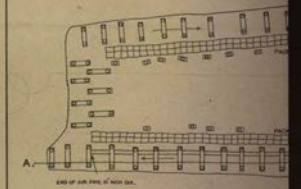
PLAN ILLUSTRATING REPORT ON FATAL ACCIDENT BY EXPLOSION OF FIRE DAMP AT NORTH WESTERN RAILWAY COMPANY'S KHOST COLLIERY.




MAIN HAULAGE DIP OR WEST
MAIN LEVEL
BACK DIP OR RAIN RETURN
DISTRICT IN WHICH EXPLOSION OCCURRED
MUD PLASTERED PLANK STOPPING PARTLY BLOWN OUT.

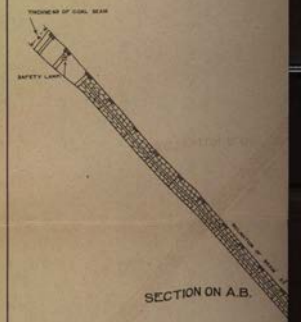
PLAN.
SCALE 1 INCH = 50 FEET.





ENLARGED P

SCALE 1 INCH



SECTION ON A.B.

REFERENCES

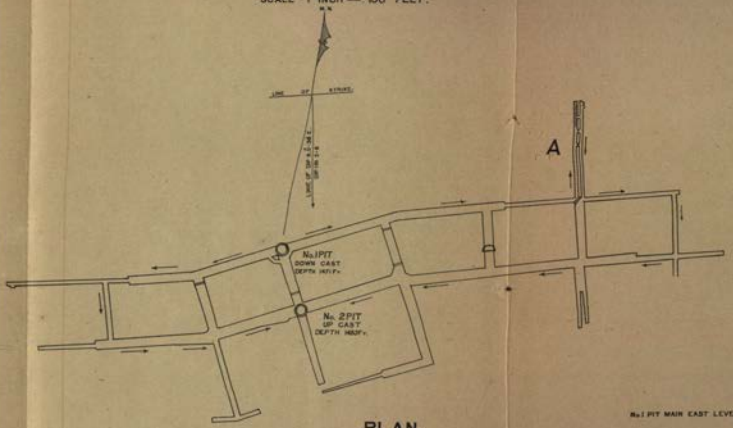
SEAM ..... COAL

PROPS ..... WOOD

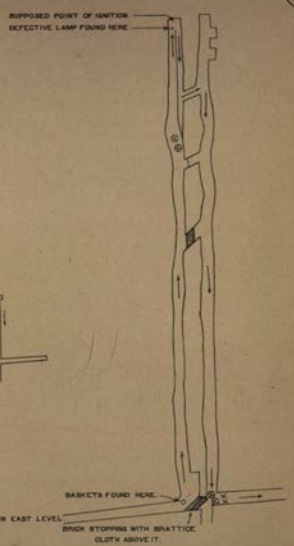
DIRECTION OF AIR CURRENT .....

PLAN ILLUSTRATING REPORT ON FATAL ACCIDENT BY EXPLOSION OF FIRE DAMP AT THE BENGAL COAL Co. LTD'S. PARBELIA MINE.

SCALE 1 INCH = 100 FEET.



PLAN.


SUPPOSED POINT OF IGNITION
DEFECTIVE LAMP FOUND HERE
BASKETS FOUND HERE.
No.1 PIT MAIN EAST LEVEL
BRICK STOPPING WITH BRATTICE CLOTH ABOVE IT.

ENLARGED PLAN AT A.

SCALE 1 INCH = 20 FEET.

— REFERENCES. —

DIRECTION OF AIR CURRENT SHOWN THUS ——→

STOPPINGS SHOWN THUS ——H

DOOR SHOWN THUS ——H

BRATTICE SHOWN THUS ——H

PERSONS BURNT AND DEAD ——⊗

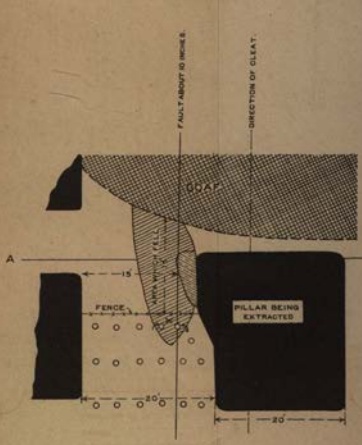
PERSONS INJURED ——×

LITH BY THACKER, SPINK & Co. CALCUTTA.

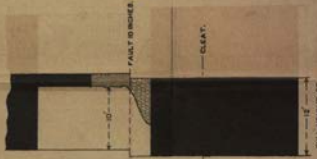
PLAN C.

PLAN ILLUSTRATING REPORT ON FATAL ACCIDENT BY FALL OF ROOF AT THE NORTH WEST COAL Co LTDS ENA MINE.

SCALE 1 INCH = 10 FT



PLAN.



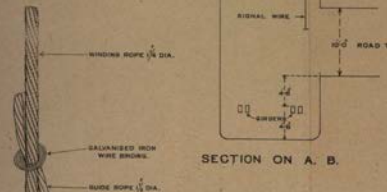
SECTION ON A.B.

REFERENCES

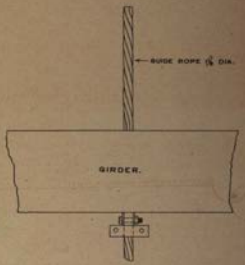
AREA WHICH FELL.....
PORTION OF PILLAR CRUSHED.....
PROPS.....
POSITION OF DECEASED.....

LITHO BY TURNER SPINK & DUNCAFFE

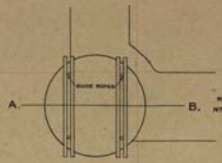
PLAN ILLUSTRATING REPORT ON FATAL ACCIDENT BY FALL OF GUIDE ROPE IN SHAFT AT THE TATA IRON & STEEL Co. LTD'S MALKERA MINE.



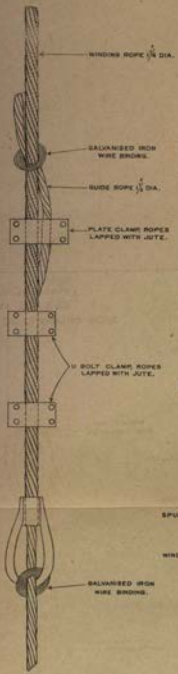
SECTION ON A. B.



CLAMPS AT BOTTOM END OF GUIDE ROPE.



PLAN OF SHAFT BOTTOM.


WINDING ROPE 1¼ DIA.
GALVANISED IRON WIRE BINDING.
GUIDE ROPE 1⅛ DIA.
PLATE CLAMP ROPES LAPPED WITH JUTE.
U BOLT CLAMP ROPES LAPPED WITH JUTE.
GALVANISED IRON WIRE BINDING.

DETAILS OF CLAMPING ROPE AT TOP END. (NOT TO SCALE)

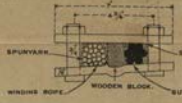
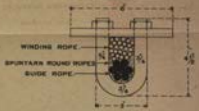


PLATE CLAMP.
SCALE ¼ INCH = 1 INCH.



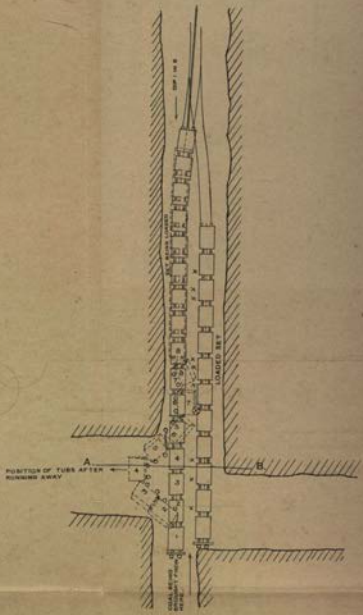
U BOLT CLAMP.
SCALE ¼ INCH = 1 INCH.

LITHO BY THACKER SPINK & CO CALCUTTA

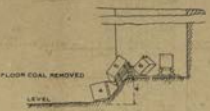
PLAN ILLUSTRATING REPORT ON

FATAL ACCIDENT BY TUBS ON HAULAGE INCLINE AT KIRKEND COAL Co's KIRKEND MINE.

SCALE 1 INCH 10 FEET.



PLAN.



SECTION ON A.B.

APPENDIX I.

STATISTICS OF MINES AND MINERALS.

Table No. 1.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1922.

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines: Worked by mechanical power.	Number of mines: Not worked by mechanical power.	Number of mines inspected: Number of mines inspected.	Number of mines inspected: Number of inspections.	Total output.	Average number of persons employed daily in and about the mines: Below ground: Miners: Adult males.	Miners: Adult females.	Miners: Children.	Miners: Total.	Others: Adult males.	Others: Adult females.	Others: Children.	Others: Total.	Total below ground.	Above ground: Adult males.	Above ground: Adult females.	Above ground: Children.	Above ground: Total above ground.	Grand total below and above ground.
							A.—COAL.														
							Tons.														
Assam	Lakhimpur	5	4	1	5	13	291,747	1,878	220	..	2,098	..	..	..	..	2,098	671	199	83	953	3,051
	Naga Hills	1	..	1	1	2	55,903	263	..	..	263	..	..	..	..	263	274	16	3	293	556
	Sibsagar	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	TOTAL	6	4	2	6	15	347,650	2,141	220	..	2,361	..	..	..	..	2,361	945	215	86	1,246	3,607
Baluchistan	Kalat	1	..	1	..	..	80	20	..	..	20	5	..	..	5	25	5	..	..	5	30
	Loralai	1	..	1	..	..	42	15	..	..	15	..	..	..	..	15	20	..	..	20	35
	Quetta-Pishin	8	..	8	..	..	6,644	89	..	..	89	9	..	..	9	98	59	..	..	59	157
	Sibi-Khost	6	1	5	2	6	33,866	290	..	..	290	298	..	..	298	588	433	..	11	444	1,032
	TOTAL	16	1	15	2	6	40,632	414	..	..	414	312	..	..	312	726	517	..	11	528	1,254
Bengal	Bankura, Raniganj	4	..	4	3	4	6,881	50	24	..	74	10	1	..	11	85	33	43	..	76	161
	Birbhum	8	4	4	..	..	12,154	110	4	..	114	34	23	..	57	171	101	75	3	179	350
	Burdwan	271	214	57	223	458	4,309,951	11,646	5,829	17	17,492	5,729	3,405	47	9,181	26,673	11,243	6,146	320	17,709	44,382
	TOTAL	283	218	65	228	462	4,328,986	11,806	5,857	17	17,680	5,773	3,429	47	9,249	26,929	11,377	6,264	323	17,964	44,893

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals during the year 1922—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines: Worked by mechanical power.	Number of mines: Not worked by mechanical power.	Number of mines inspected during the year: Number of mines inspected.	Number of mines inspected during the year: Number of inspections.	Total output.	Average number of persons employed daily in and about the mines: Below ground: Mines: Adult males.	Mines: Adult females.	Mines: Children.	Mines: Total.	Others: Adult males.	Others: Adult females.	Others: Children.	Others: Total.	Total below ground.	Above ground: Adult males.	Above ground: Adult females.	Above ground: Children.	Total above ground.	Grand total below and above ground.
							A—COAL—*contd.*														
							Tons.														
Bihar and Orissa	Hazaribagh: Bokaro	6	3	3	3	6	1,037,17	2,445	2,038	1	5,084	173	139	..	312	5,396	2,838	1,330	383	4,551	9,947
	Hazaribagh: Giridih	13	4	9	11	21	859,101	3,067	1,272	14	4,353	68	14	14	96	4,449	1,815	940	25	2,780	7,229
	Hazaribagh: Jharia	11	5	6	12	17	187,758	488	376	76	935	64	27	10	101	1,036	897	462	106	1,465	2,501
	Hazaribagh: Ramgarh	2	..	2	..	..	4,565	24	40	20	84	..	..	..	..	84	46	7	24	77	161
	Manbhum: Jharia	690	199	191	369	896	9,745,541	20,782	16,755	179	37,696	8,430	3,802	81	12,313	50,009	22,755	12,315	1,565	36,635	86,644
	Manbhum: Raniganj	124	21	103	104	179	849,951	2,867	1,316	3	4,186	865	505	16	1,386	5,572	2,825	1,613	127	4,565	10,137
	Palamau, Daltonganj	1	1	..	1	1	21,933	60	52	10	122	34	7	..	41	163	82	19	13	114	277
	Sambalpur, Hingir-Rampur	2	1	1	1	1	68,618	89	..	..	89	189	200	32	421	510	201	72	14	287	797
	Santhal Parganas: Jainty	5	3	2	1	2	96,612	443	191	..	634	166	67	..	233	867	261	114	..	375	1,242
	Santhal Parganas: Raniganj	7	4	3	3	3	24,277	125	93	4	222	25	27	..	52	274	239	177	25	441	715
	TOTAL	861	241	320	505	1,126	12,708,527	30,365	22,733	307	63,405	10,014	4,788	153	14,955	68,360	31,959	17,049	2,282	51,290	119,650
Central Provinces	Betul	3	..	3	..	..	994	14	11	3	28	19	28	..	47	75	33	21	4	58	133
	Chanda, Ballarpur	8	7	1	4	6	132,680	844	10	..	854	616	295	1	912	1,766	674	149	61	884	2,650
	Chhindwara, Pench Valley	48	11	37	10	11	453,484	1,862	483	165	2,510	869	1,470	94	2,433	4,943	1,713	1,140	485	3,343	8,286
	Narsinghpur, Mohpani	1	1	..	1	4	84,506	306	..	..	306	609	418	..	1,027	1,333	546	157	..	703	2,036
	Yeotmal	2	1	1	..	..	3,687	10	..	..	10	3	11	..	14	24	38	33	..	71	95
	TOTAL	62	20	42	15	21	675,841	3,036	504	168	3,708	2,116	2,222	95	4,433	8,141	3,009	1,500	550	5,059	13,200

Burma	Southern Shan States	1	1	..	..	..	172	38	..	..	38	..	..	..	..	38	27	..	..	27	65
Punjab	Jhelum	20	1	19	9	10	47,832	481	..	..	481	349	..	..	349	830	555	..	5	560	1,390
	Mianwali	1	..	1	1	2	14,801	59	..	..	59	2	..	..	2	61	111	8	3	122	183
	Shahpur	3	..	3	2	2	5,047	40	..	..	40	8	..	..	8	48	65	..	..	65	113
	TOTAL	24	1	23	12	14	67,180	580	..	..	580	359	..	..	359	939	731	8	8	747	1,686
	GRAND TOTAL (COAL) FOR 1922	953	486	467	766	1,644	18,168,988	48,380	29,514	492	78,186	18,574	10,439	295	29,308	107,494	48,565	25,036	3,260	76,861	184,355
	" " OF PRECEDING YEAR	884	466	418	581	1,005	18,358,934	..	..	..	..	..	..	..	..	108,957	49,943	28,666	3,081	81,690	190,647
	DIFFERENCE	+69	+20	+49	+185	+639	—189,946	..	..	..	..	..	..	..	..	—1,463	—1,378	—3,630	+179	—4,829	—6,292
	B—MICA.																				
							Cwt.														
Bihar and Orissa	Gaya	34	..	34	..	..	15,975	497	170	47	714	21	..	..	21	735	264	177	342	783	1,518
	Hazaribagh	300	34	266	..	..	12,195	2,318	825	384	3,527	389	487	340	1,216	4,743	1,592	873	669	3,134	7,877
	Monghyr	2	..	2	..	..	5	11	7	..	18	..	..	..	..	18	46	14	31	91	109
	Sambalpur	1	..	1	..	..	..	12	14	4	30	34	42	9	85	115	..	..	..	..	115
	TOTAL	337	34	303	..	..	28,175	2,838	1,016	435	4,289	444	529	349	1,322	5,611	1,902	1,064	1,042	4,008	9,619
Madras	Nellore	66	15	51	18	18	1,243	271	132	16	419	85	55	5	145	564	174	142	49	365	929
	Nilgiris	2	..	2	..	..	55	18	..	..	18	2	..	..	2	20	5	4	3	12	32
	TOTAL	68	15	53	18	18	1,298	289	132	16	437	87	55	5	147	584	179	146	52	377	961
Rajputana	Ajmer-Merwara	36	..	36	12	12	616	231	127	10	368	36	40	2	78	446	65	9	5	79	525
	GRAND TOTAL (MICA) FOR 1922	441	49	392	30	30	30,089	3,358	1,275	461	5,094	567	624	356	1,547	6,641	2,146	1,219	1,099	4,464	11,105
	" " OF PRECEDING YEAR	609	66	543	113	114	29,470	..	..	..	..	..	..	..	..	10,329	2,956	1,929	1,329	6,214	16,543
	DIFFERENCE	—168	—17	—151	—83	—84	+619	..	..	..	..	..	..	..	..	—3,730	—809	—702	—234	—1,745	—5,475

APPENDIX I—*contd.*

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1922—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.													
								Below ground.								Total below ground.	Above ground.				Grand total below and above ground.
								Miners.				Others.									
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children	Total.	Adult males.	Adult females	Children	Total.		Adult males.	Adult females	Children.	Total above ground.	
							C—MANGANESE ORE.														
							Tons.														
Bombay	Panch Mahals	2	..	2	2	2	39,703	676	476	..	1,152	67	1	..	68	1,220	210	58	117	385	1,605
Central Provinces	Balaghat	22	1	21	9	9	148,823	1,461	1,686	81	3,228	60	..	..	60	3,288	510	470	87	1,067	4,355
	Bhandara	5	..	5	1	2	35,413	235	366	44	645	3	..	..	3	648	155	143	32	330	978
	Chhindwara	1	1	..	1	1	33,473	280	406	9	695	..	..	..	..	695	146	76	41	263	958
	Jubbulpore	1	..	1	..	..	..	..	..	..	..	6	..	..	6	6	14	6	..	20	26
	Nagpur	20		18	10	11	127,065	1,159	1,354	23	2,536	58	3	..	61	2,597	594	362	32	988	3,585
	TOTAL	49	4	45	23	25	344,774	3,135	3,812	157	7,104	127	3	..	130	7,234	1,419	1,057	192	2,668	9,902
Madras	Vizagapatam	3	..	3	3	3	7,845	223	136	45	404	..	..	..	..	404	100	14	..	114	518
	GRAND TOTAL (MANGANESE) FOR 1922	54	4	50	26	28	392,322	4,034	4,424	202	8,660	194	4	..	198	8,858	1,729	1,129	309	3,167	12,025
	„ „ OF PRECEDING YEAR	65	4	61	42	48	534,757	..	..	..	..	..	..	..	..	13,472	1,904	1,673	278	3,855	17,327
	DIFFERENCE	—11	..	—11	—16	—20	—142,435	..	..	..	..	..		..	..	—4,614	—175	—544	+31	—688	—5,302

D.—LIMESTONE.

							Tons.														
Central Provinces	Bilaspur	2	..	2	..	..	8,603	60	..	..	60	10	25	7	42	102	75	125	14	214	316
	Jubbulpore, Katni	24	2	22	20	20	123,119	1,965	936	50	2,051	86	921	46	1,053	3,104	392	261	83	736	3,840
	TOTAL	26	2	24	20	20	131,722	1,125	936	50	2,111	96	946	53	1,095	3,206	467	386	97	950	4,156
Burma	Northern Shan States	1	..	1	..	..	8,785	30	..	..	30	..	..	..	..	30	..	..	..	..	30
	GRAND TOTAL (LIMESTONE) FOR 1922.	27	2	25	20	20	140,507	1,155	936	50	2,141	96	946	53	1,095	3,236	467	386	97	950	4,186
	" " OF PRECEDING YEAR	37	1	36	23	24	284,254	..	..	..	..	..	..	..	..	4,986	567	930	126	1,623	6,609
	DIFFERENCE	—10	+1	—11	—3	—4	—143,747	..	..	..	..	..	..	..	..	—1,750	—100	—544	—29	—673	—2,423

E.—SALT.

							Tons.														
Punjab	Jhelum	1	1	..	1	5	148,277	578	..	..	578	60	478	49	587	1,165	45	..	..	45	1,210
	Mianwali	1	..	1	1	2	16,684	20	..	..	20	43	..	6	49	69	..	..	..	..	69
	Shahpur	1	..	1	..	..	22,196	45	35	3	83	..	..	..	..	83	..	..	..	..	83
	GRAND TOTAL (SALT) FOR 1922.	3	1	2	2	7	187,157	643	35	3	681	103	478	55	636	1,317	45	..	..	45	1,362
	" " OF PRECEDING YEAR	4	1	3	1	1	123,084	..	..	..	..	..	..	..	..	903	62	..	..	62	965
	DIFFERENCE	—1	..	—1	+1	+6	+64,073	..	..	..	..	..	..	..	..	+414	—17	..	..	—17	+397

F.—GEMS.

(*a*) **Rubies.**

(*b*) **Sapphire.**

(*c*) **Spinel.**

(*d*) **Beryl.**

							Carats.														
Burma	Katha	..	..	..	..	..	93,078	624	..	..	624	135	..	..	135	759	495	..	..	495	1,254
	Katha	3	2	1	..	..	102,462														
	Katha	..	..	..	..	..	35,620														
	TOTAL	3	2	1	..	..	231,160	624	..	..	624	135	..	..	135	759	495	..	..	495	1,254
Rajputana	Ajmer-Merwara	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (GEMS) FOR 1922.	5	2	3	..	..	231,160	624	..	..	624	135	..	..	135	759	495	..	..	495	1,254
	" " OF PRECEDING YEAR	6	2	4	..	..	200,215	..	..	..	..	..	..	..	..	795	458	..	..	458	1,253
	DIFFERENCE	—1	..	—1	..	..	+30,945	..	..	..	..	..	..	..	..	—36	+37	..	..	+37	

APPENDIX I—*contd.*

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1922—*contd.*

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.		NUMBER OF MINES INSPECTED DURING THE YEAR.		TOTAL OUTPUT	AVERAGE NUMBER OF PERSONS EMPLOYED DAILY IN AND ABOUT THE MINES.													
								BELOW GROUND.									ABOVE GROUND.				
								MINERS.				OTHERS.									
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children.	Total.	Adult males.	Adult females.	Children.	Total.	Total below ground.	Adult males.	Adult females.	Children.	Total above ground.	Grand total below and above ground.
	G.—SLATE.						Tons.														
Bihar and Orissa	Monghyr	5	..	5	..	..	2,624	142	103	61	306	..	..	..	..	306	114	..	..	114	420
Punjab	Gurdaspur	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Gurgaon	6	..	6	4	4	33,661	25	..	4	29	66	..	34	100	129	19	..	6	25	154
	Kangra	4	..	4	..	..	4,936	95	..	..	95	..	..	..	..	95	38	23	8	69	164
	TOTAL	10	..	10	4	4	38,600	120	..	4	124	66	..	34	100	224	57	23	14	94	318
	GRAND TOTAL (SLATE) FOR 1922	15	..	15	4	4	38,224	262	103	65	430	66	..	34	100	530	171	23	14	208	738
	" " OF PRECEDING YEAR.	18	..	18	9	9	50,337	..	..	..	..	..	..	..	..	613	195	20	20	235	848
	DIFFERENCE	—3	..	—3	—5	—5	—12,113	..	..	..	..	..	..	..	..	—83	—24	+3	—6	—27	—110
	H.—GOLD.						Ozs.														
Bihar and Orissa	Singhbhum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madras	Anantapur	4	3	1	1	1	8,388	58	..	..	58	48	..	..	48	106	293	79	31	403	509
	GRAND TOTAL (GOLD) FOR 1922	4	3	1	1	1	8,388	58	..	..	58	48	..	..	48	106	293	79	31	403	509
	" " OF PRECEDING YEAR.	4	4	..	2	2	10,108	..	..	..	..	..	..	..	..	101	322	82	43	447	548
	DIFFERENCE	..	—1	+1	—1	—1	—1,720	..	..	..	..	..	..	..	..	+5	—29	—3	—12	—44	—39

I.—IRON ORE.

							Tons.															
Burma	Mandalay	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	46	..	..	46	46
	Northern Shan States	3	..	3	..	..	27,680	..	..	..	..	225	17	..	242	242	122	..	..	122	364
	TOTAL	4	..	4	..	..	27,680	..	..	..	..	225	17	..	242	242	168	..	..	168	410
Bihar and Orissa	Singhbhum	5	..	5	3	7	212,703	605	495	30	1,130	..	..	..	..	1,130	382	162	56	600	1,730
Rajputana	Ajmer-Merwara	1	1	..	..	..	..	7	..	..	7	3	..	..	3	10	20	..	..	20	30
	GRAND TOTAL (IRON ORE) FOR 1922	10	1	9	3	7	240,383	612	495	30	1,137	228	17	..	245	1,382	570	162	56	788	2,170
	" " OF PRECEDING YEAR	9	2	7	4	4	286,190	..	..	..	..	..	..	..	..	1,954	839	276	11	1,126	3,080
	DIFFERENCE	+1	—1	+2	—1	+3	—45,807	..	..	..	..	..	..	..	..	—572	—269	—114	+45	—338	—910

J.—WOLFRAM ORE.

							Tons.															
Burma	Mergui	..	..	..	..	..	3½	Labour figures included with those for Tin ore														
	Tavoy	3	..	3	..	..	938	107	..	..	167	..	..	..	..	167	32	..	..	32	199
	Thaton	..	..	..	..	..	½	Labour figures included with those for Tin ore.														
	TOTAL	3	..	3	..	..	942	107	..	..	167	..	..	..	..	167	32	..	..	32	199
	GRAND TOTAL (WOLFRAM) FOR 1922	3	..	3	..	..	942	107	..	..	167	..	..	..	..	167	32	..	..	32	199
	" " OF PRECEDING YEAR	15	2	13	11	11	884½	..	..	..	..	..	..	..	..	1,708	329	7	..	336	2,044
	DIFFERENCE	—12	—2	—10	—11	—11	+57½	..	..	..	..	..	..	..	..	—1,541	—297	—7	..	—304	1,845

K.—MAGNESITE.

							Tons.															
Madras	Salem	2	..	2	1	1	18,417	260	248	408	925	..	..	..	..	925	112	..	40	152	1,077
	TOTAL OF PRECEDING YEAR	2	..	2	..	..	17,152	..	..	..	..	..	..	..	..	798	109	..	32	141	939
	DIFFERENCE	..	..	..	+1	+1	+1,265	..	..	..	..	..	..	..	..	+127	+ 3	..	+8	+11	+138

APPENDIX I—*contd.*

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*contd.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals during the year 1922—*contd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines: Worked by mechanical power.	Number of mines: Not worked by mechanical power.	Number of mines inspected during the year: Number of mines inspected.	Number of mines inspected during the year: Number of inspections.	Total output.	Average number of persons employed daily in and about the mines: Below ground: Miners: Adult males.	Miners: Adult females.	Miners: Children.	Miners: Total.	Others: Adult males.	Others: Adult females.	Others: Children.	Others: Total.	Total below ground.	Above ground: Adult males.	Above ground: Adult females.	Above ground: Children.	Above ground: Total above ground.	Grand Total below and above ground.
					L.—CHROMITE ORE.																
Baluchistan . . .	Zhob	22	..	22	..	..	Tons. 18,548	141	..	..	141	..	..	..	..	141	143	..	..	143	284
Bihar and Orissa . .	Singhbhum	3	..	3	1	1	1,147	68	55	20	143	..	..	..	..	143	26	22	4	52	195
	GRAND TOTAL (CHROMITE ORE) FOR 1922 .	25	..	25	1	1	19,695	209	55	20	284	..	..	..	..	284	169	22	4	195	479
	TOTAL OF PRECEDING YEAR .	24	..	24	..	..	27,727	..	..	..	..	..	..	..	..	546	151	44	17	212	758
	DIFFERENCE .	+1	..	+1	+1	+1	—8,032	..	..	..	..	..	..	..	..	—262	+18	—22	—13	—17	—279
					M.—COPPER ORE.																
Bihar and Orissa . .	Singhbhum	4	2	2	2	4	Tons. 30,764	813	3	..	816	4	..	..	4	820	1,321	525	78	1,924	2,744
Central Provinces . .	Balaghat	1	..	1	..	..	..	8	3	..	11	..	..	..	..	11	8	1	1	10	21
	GRAND TOTAL (COPPER ORE) FOR 1922	5	2	3	2	4	30,764	821	6	..	827	4	..	..	4	831	1,329	526	79	1,934	2,765
	„ „ OF PRECEDING YEAR .	4	2	2	2	2	32,560	..	..	..	..	..	..	..	..	738	1,394	677	74	2,145	2,883
	DIFFERENCE .	+1	..	+1	..	+2	—1,796	..	..	..	..	..	..	..	..	+93	—65	—151	+5	—211	—118
					N.—BAUXITE.																
Central Provinces . .	Jubbulpore	1	..	1	..	..	Cwt. 79,740	23	30	..	53	5	..	..	5	58	24	33	5	62	120
	TOTAL OF PRECEDING YEAR . .	1	1	..	1	1	93,060	..	..	..	..	..	..	..	..	208	9	4	..	13	221
	DIFFERENCE	..	—1	+1	—1	—1	—13,320	..	..	..	..	..	..	..	..	—150	+15	+29	+5	+49	—101

O.—CLAY.

							Tons.														
Bihar and Orissa	Manbhum	1	..	1	..	..	1,231	2	2	..	4	..	..	..	..	4	2	4	..	6	10
	Palamau	1	..	1	..	..	1,927	8	8	5	21	..	..	..	..	21	20	10	6	36	57
	TOTAL	2	..	2	..	..	3,158	10	10	5	25	..	..	..	..	25	22	14	6	42	67
Central Provinces	Jubbulpore	5	2	3	2	2	46,802	149	312	8	469	2	100	..	102	571	40	..	8	48	619
Delhi	Delhi	5	..	5	3	3	7,958	24	..	..	24	12	..	..	12	36	29	1	..	30	66
	GRAND TOTAL (CLAY) FOR 1922	12	2	10	5	5	57,918	183	322	13	518	14	100	..	114	632	91	15	14	120	752
	TOTAL OF PRECEDING YEAR	14	2	12	3	3	87,475	..	..	..	..	..	..	..	..	1,124	208	84	102	394	1,518
	DIFFERENCE	—2	..	—2	+2	+2	—29,557	..	..	..	..	..	..	..	..	—492	—117	—69	—88	—274	—766

P.—LEAD ORE.

							Tons.														
Burma	Northern Shan States	1	1	..	..	..	*172,017	1,161	..	..	1,161	120	..	..	120	1,281	539	..	..	539	1,820
Central Provinces	Drug	1	..	1	..	..	1	5	12	..	17	..	..	..	..	17	5	12	..	17	34
	GRAND TOTAL (LEAD ORE) FOR 1922	2	1	1	..	..	172,018	1,166	12	..	1,178	120	..	..	120	1,298	544	12	..	556	1,854
	" " OF PRECEDING YEAR	2	1	1	1	4	144,089½	..	..	..	..	..	..	..	..	1,009	433	12	..	445	1,454
	DIFFERENCE	..	..	..	—1	—4	+27,928½	..	..	..	..	..	..	..	..	+289	+111	..	..	+111	+400

Q.—TIN ORE.

							Tons.														
Burma	Mergui	15	..	15	3	3	181	482	22	3	507	10	4	..	14	521	87	6	..	93	614
	Tavoy	27	1	26	8	9	894	1,744	24	4	1,772	..	..	..	..	1,772	520	14	..	534	2,306
	Thaton	2	..	2	..	..	5	19	19	..	38	..	..	..	..	38	..	..	..	..	38
	TOTAL	44	1	43	11	12	1,080	2,245	65	7	2,317	10	4	..	14	2,331	607	20	..	627	2,958
	TOTAL OF PRECEDING YEAR	31	3	28	2	2	1,032	..	..	..	..	..	..	..	..	852	711	45	5	761	1,613
	DIFFERENCE	+13	—2	+15	+9	+10	+48	..	..	..	..	..	..	..	..	+1,479	—104	—25	—5	—134	+1,345

* Amount of refined lead extracted 39,214 tons.

APPENDIX I—*contd.*

STATISTICS OF MINES AND MINERALS—*contd.*

Table No. 1—*concld.*

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1922—*concld.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	Number of mines.		Number of mines inspected during the year.		Total output.	Average number of persons employed daily in and about the mines.													
								Below ground.									Above ground.				
								Miners.				Others.									
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Adult males.	Adult females.	Children.	Total.	Adult males.	Adult females.	Children.	Total.	Total below ground.	Adult males.	Adult females.	Children.	Total above ground.	Grand total below and above ground.
								R.—STEATITE.													
							Cwt.														
Central Provinces	Jubbulpore	2	..	2	*3	3	1,796	18	5	..	23	..	..	..	..	23	3	12	3	18	41
Madras	Nellore	2	..	2	2	2	1,408	13	1	..	14	..	..	..	..	14	8	3	..	11	25
	GRAND TOTAL (STEATITE) FOR 1922	4	..	4	5	5	3,204	31	6	..	37	..	..	..	..	37	11	15	3	29	66
	„ „ OF PRECEDING YEAR	6	..	6	3	3	23,430	..	..	..	..	..	..	..	..	134	31	60	21	112	246
	DIFFERENCE	—2	..	—2	+2	+2	—20,226	..	..	..	..	..	..	..	..	—97	—20	—45	—18	—83	—180
								S.—FULLERS' EARTH.													
							Tons.														
Central Provinces	Jubbulpore	..	..	..	..	..	152		Labour figures included with those for limestone.												
	TOTAL OF PRECEDING YEAR	..	..	..	..	..	113			Ditto		Ditto		Ditto.							
	DIFFERENCE	..	..	..	..	..	+39														
								T.—SILVER.													
							Ozs.														
Burma	Northern Shan States	..	..	..	..	..	4,205,584†		Labour figures included with those for lead ore.												
Madras	Anantapur	..	..	..	..	..	554		Labour figures included with those for gold.												
	GRAND TOTAL (SILVER) FOR 1922	..	..	..	..	..	4,206,138	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	„ „ OF PRECEDING YEAR	..	..	..	..	..	3,555,640	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	DIFFERENCE	..	..	..	..	..	+650,498	..	..	..	..	..	..	..	..	..	..	..	..	..	..

U.—APATITE.

							Tons.														
Bihar and Orissa	Singhbhum	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	35	54	..	89	89
	TOTAL OF PRECEDING YEAR	1	..	1	..	..	347	..	..	..	..	..	..	..	..	11	8	21	..	29	40
	DIFFERENCE	..	..	..	..	..	—347	..	..	..	..	..	..	..	..	—11	+27	+33	..	+60	+49

V.—GRAPHITE.

							Cwt.														
Central Provinces	Betul	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	3	2	..	5	5
	TOTAL OF PRECEDING YEAR	2	..	2	..	..	503	..	..	..	..	..	..	..	..	37	4	6	4	14	51
	DIFFERENCE	—1	..	—1	..	..	—503	..	..	..	..	..	..	..	..	—37	—1	—4	—4	—9	—46

W.—OCHRE.

							Tons.														
Bihar and Orissa	Puri	1	1	..	..	..	400	8	..	..	8	..	..	..	..	8	26	..	..	26	34
Central Provinces	Jubbulpore	2	..	2	..	..	594	40	9	4	53	..	..	..	..	53	105	46	11	162	215
	GRAND TOTAL (OCHRE) FOR 1922	3	1	2	..	..	994	48	9	4	61	..	..	..	..	61	131	46	11	188	249
	" " OF PRECEDING YEAR	1	1	..	..	..	450	..	..	..	..	..	..	..	..	8	25	..	..	25	33
	DIFFERENCE	+2	..	+2	..	..	+544	..	..	..	..	..	..	..	..	+53	+106	+46	+11	+163	+216

X.—BARYTES.

							Cwt.														
Madras	Kurnool	3	..	3	..	..	15,785	64	..	6	70	..	..	..	..	70	18	80	26	124	194
	TOTAL OF PRECEDING YEAR	1	..	1	..	..	9,400	..	..	..	..	..	..	..	..	7	2	8	10	20	27
	DIFFERENCE	+2	..	+2	..	..	+6,385	..	..	..	..	..	..	..	..	+63	+16	+72	+16	+104	+167
	GRAND TOTAL (ALL MINERALS), 1922	1,618	555	1,063	877	1,769	Tons 19,469,561 Cwt. 128,818 Carats. 231,160 Troy ounces 4,214,526	64,352	37,335	1,761	103,448	20,164	12,612	793	33,569	137,017	57,587	28,859	5,048	91,494	228,511
	GRAND TOTAL OF PRECEDING YEAR	1,741	558	1,183	798	1,223	Tons. 19,949,388½ Cwt. 155,865 Carats. 200,215 Troy ounces 3,565,748	..	..	..	..	..	..	..	..	149,299	60,665	34,546	5,153	100,364	249,663
	DIFFERENCE	—123	—3	—120	+79	+536	Tons. —479,827½ Cwt. —27,047 Carats. +30,945 Troy ounces +648,778	..	..	..	..	..	..	..	..	—12,282	—3,078	—5,687	—105	—8,870	—21,152

* One mine had been closed since September 1921.
† Extracted from 172,017 tons of lead ore.

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APPENDIX I—*contd.*

Table No. 2.

Analysis of figures relating to output of Coal and Coke.

Province.	District and mineral field.	COAL.								COKE.							
		Opening stock.	Raisings.	Total.	Despatches	Colliery consumption.	Coal delivered to coking.	Coal despatched to coke factories.	Closing stock.	Opening stock.		Coke made.		Despatches.		Closing stock.	
										Hard.	Soft.	Hard.	Soft.	Hard.	Soft.	Hard.	Soft.
		Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Assam	Lakhimpur	516	291,747	292,263	279,645	11,591	995	..	32	...	..	332	..	332	..	..	..
	Naga Hills	96	55,903	55,999	55,204	383	..	..	412	..	..	..	..	..	..	..	..
	Sibsagar	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..
	Total	612	347,650	348,262	334,849	11,974	995	..	444	..	..	332	..	332	..	..	..
Baluchistan	Kalat	..	80	80	23	..	..	..	57	..	..	..	..	..	..	..	..
	Loralai	..	42	42	28	..	..	..	14	..	..	..	..	..	..	..	..
	Quetta-Pishin	1,476	6,644	8,120	6,880	76	..	..	1,164	..	..	..	..	..	..	..	..
	Sibi-Khost	2,217	33,866	36,083	25,977	5,852	..	..	4,254	..	..	..	..	..	....	..	..
	Total	3,693	40,632	44,325	32,908	5,928	..	..	5,489	..	..	..	..	..	..	..	..
Bengal	Bankura-Raniganj	1,501	6,881	8,382	3,510	3,160	..	..	1,712	..	..	..	..	..	..	..	..
	Birbhum ,,	284	12,154	12,438	7,996	4,031	..	..	411	..	..	..	..	..	..	..	..
	Burdwan ,,	197,918	4,309,951	4,507,869	3,537,715	735,044	9,809	5,905	225,301	97	76	809	4,699	891	4,392	15	383
	Total	199,703	4,328,986	4,528,689	3,549,221	742,235	9,809	5,905	227,424	97	76	809	4,699	891	4,392	15	383

Bihar and Orissa	Hazaribagh	Bokaro	1,099	1,037,171	1,038,270	1,003,861	19,094	5,942	..	9,373	..	485	..	4,017	..	4,222	..	280
		Giridih	24,735	659,101	683,836	552,589	67,532	49,637	..	14,078	..	..	42,752	..	42,752	..	..	..
		Jharia	32,393	187,758	220,151	149,563	32,132	1,387	532	37,069	128	..	272	458	373	449	27	9
		Ramgarh	..	4,565	4,565	4,212	..	..	..	353	..	..	..	..	..	..	..	..
	Manbhum	Jharia	1,603,375	9,748,541	11,351,916	7,558,904	1,386,431	289,336	311,377	2,117,245	7,427	10,203	89,270	98,401	79,699	87,006	16,998	21,598
		Raniganj	207,541	849,951	1,057,492	531,367	224,676	122,803	15,938	178,646	..	2,216	86	81,263	47	72,267	39	11,212
	Palamau-Daltonganj		830	31,933	32,763	16,915	4,805	..	..	11,043	..	..	..	..	..	..	..	..
	Sambalpur-Hingir Rampur		..	68,618	68,618	49,013	18,756	..	..	849	..	..	..	..	..	..	..	..
	Sonthal Parganas.	Jainty	3,759	96,612	100,371	88,860	9,970	..	..	1,541	..	..	..	..	..	..	..	..
		Raniganj	4,439	24,277	28,716	10,449	10,258	..	..	8,009	..	..	..	..	..	..	..	..
		TOTAL	1,878,171	12,708,527	14,586,698	9,965,733	1,773,654	469,105	327,847	2,378,206	7,555	12,904	132,380	184,139	122,871	163,944	17,064	33,099
Burma	Southern Shan States		224	172	396	19	138	184	..	55	..	..	..	126	..	32	..	94
Central Provinces	Betul		150	994	1,144	585	..	..	..	559	..	..	..	..	..	..	..	..
	Chanda		3,809	132,680	136,489	107,706	23,904	..	..	4,879	..	..	..	..	..	..	..	..
	Chhindwara		9,887	453,484	463,371	408,943	30,881	21	..	23,526	..	..	..	15	..	15	..	..
	Narsinghpur		3,751	84,996	88,747	74,984	8,156	..	..	5,607	..	..	..	..	..	..	..	..
	Yeotmal		596	3,687	4,283	3,450	833	..	..	..	..	..	..	..	..	..	..	..
	TOTAL		18,193	675,841	694,034	595,668	63,774	21	..	34,571	..	..	..	15	..	15	..	..
Punjab	Jhelum		3,919	47,832	51,751	45,226	3,297	..	..	3,228	..	..	..	..	..	..	..	..
	Mianwali		1,189	14,301	15,490	13,824	33	..	..	1,633	..	..	..	..	..	..	..	..
	Shahpur		1,162	5,047	6,209	5,665	40	..	..	504	..	..	..	..	..	..	..	..
	TOTAL		6,270	67,180	73,450	64,715	3,370	..	..	5,365	..	..	..	..	..	..	..	..
GRAND TOTAL 1922			2,106,866	18,168,988	20,275,854	14,543,113	2,601,073	480,114	333,782	2,651,554	7,652	12,980	133,521	188,979	124,094	168,383	17,079	33,576

APPENDIX I—*contd.*

Table No. 3.

Number of mines opened and closed during the year ending 31st December 1922.

Province.	District.	Number of mines opened.	Number of mines closed.
	A.—COAL.		
Assam	Lakhimpur	..	..
	Sibsagar	..	..
	Total	..	..
Baluchistan	Kalat	1	1
	Loralai	1	..
	Quetta-Pishin	1	1
	Sibi-Khost	1	1
	Total	4	3
Bengal	Bankura	1	..
	Birbhum	1	1
	Burdwan-Raniganj	19	14
	Total	21	15
Bihar and Orissa	Hazaribagh—Bokaro	1	..
	Hazaribagh—Ramgarh	1	..
	Hazaribagh—Giridih	..	1
	Manbhum—Jharia	27	18
	Manbhum—Raniganj	15	6
	Sambalpur-Hingir-Rampur	1	..
	Total	45	25
Central Provinces	Betul	1	..
	Chanda	3	..
	Chhindwara	13	7
	Yeotmal	..	1
	Total	17	8

APPENDIX I—*contd.*

Table No. 3—*contd.*

Number of mines opened and closed during the year ending 31st December 1922—*contd.*

Province.	District.	Number of mines opened.	Number of mines closed.
Punjab	Jhelum	8	1
	Shahpur	..	1
	Total	8	2
	Total (Coal)	95	53
	B.—MICA.		
Bihar and Orissa	Gaya	6	11
	Hazaribagh	93	100
	Monghyr	1	2
	Sambalpur	..	..
	Total	100	113
Madras	Nellore	2	29
	Nilgiris	..	..
	Total	2	29
Rajputana	Ajmer-Merwara	7	21
	Beawar	..	..
	Total	7	21
	Total (Mica)	109	163
	C.—MANGANESE ORE.		
Central Provinces	Balaghat	..	3
	Bhandara	..	1
	Jubbulpore	1	..
	Nagpur	2	1
	Total (Manganese ore)	3	5

APPENDIX I—*contd.*

Table No. 3—*contd.*

Number of mines opened and closed during the year ending 31st December 1922—*contd.*

Province.	District.	Number of mines opened.	Number of mines closed.
	D.—LIMESTONE.		
Central Provinces	Bilaspur	...	1
	Jubbulpore	3	2
	Total (Limestone)	3	3
	E.—SALT.		
Punjab	Jhelum	...	...
	Mianwali	...	...
	Shahpur	...	...
	Total (Salt)	...	...
	F.—GEMS.		
Burma	Katha	1	...
Rajputana	Ajmer-Merwara	...	2
	Total (Gems)	1	2
	G.—SLATE.		
Bihar and Orissa	Monghyr	...	...
Punjab	Gurdaspur	...	...
	Gurgaon	...	1
	Kangra	...	...
	Total	...	1
	Total (Slate)	...	1
	H.—GOLD.		
Madras	Anantapur	1	...

APPENDIX I—*contd.*

Table No. 3—*contd.*

Number of mines opened and closed during the year ending 31st December 1922—*contd.*

Province.	District.	Number of mines opened.	Number of mines closed.
	I.—IRON ORE.		
Bihar and Orissa	Singhbhum	1	2
Burma	Northern Shan States	1	..
	Total (Iron ore)	2	2
	J.—WOLFRAM ORE.		
Burma	Mergui	2	1
	Tavoy	..	..
	Thaton	..	..
	Total (Wolfram ore)	2	1
	K.—COPPER ORE.		
Bihar and Orissa	Singhbhum	1	..
	L.—BAUXITE.		
Central Provinces	Jubbulpore	1	..
	M.—CLAY.		
Central Provinces	Jubbulpore	..	2
Delhi	Delhi	2	4
	Total (Clay)	2	6
	N.—LEAD ORE.		
Central Provinces	Drug	1	1
	O.—TIN ORE.		
Burma	Mergui	5	5
	Tavoy	3	7
	Thaton	1	1
	Total (Tin ore)	9	13
	P.—STEATITE.		
Central Provinces	Jubbulpore	..	1
Madras	Nellore	1	..
	Total (Steatite)	1	1
	Q.—OCHRE.		
Central Provinces	Jubbulpore	2	1
	R.—BARYTES.		
Madras	Kurnool	3	1
	GRAND TOTAL (all mines)	236	253

APPENDIX I —*contd.*

Table No. 4.

The following table shows the fluctuations in the output of the principal minerals raised from mines classed under the Indian Mines Act, 1901. The other minerals raised are gems, slate, magnesite, steatite, clay, bauxite, fuller's earth, graphite, molybdenite, ochre, barytes, apatite, and calcite.

Year.	Coal.	Manganese ore.	Mica.	Limestone.	Salt.	Gold.	Copper ore.	Wolfram ore.	Iron ore.	Chromite ore.	Tin ore.	Lead ore.	Silver.
	Tons.	Tons.	Cwt.	Tons.	Tons.	Troy ozs.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Troy ozs
1913 .	15,486,318	637,391	43,650	71,259	138,540	11,019	3,639	1,376	98,371	3,414	87	1½	..
1914 .	15,727,631	555,572	38,189	146,505	135,518	19,873	4,400	1,576	167,600	3,006	45	3½	..
1915 .	16,352,480	378,172	24,063	64,179	144,770	24,320	8,010	1,972	126,617	1,465	14	7	612
1916 .	16,419,082	568,032	35,978	45,290	160,357	23,235	2,671	2,955	142,606	5,004	88	7	1,362
1917 .	17,326,384	497,052	35,896	82,340	152,542	22,991	20,108	3,966	178,303	17,266	182	..	1,281
1918 .	19,847,039	415,357	51,572	131,451	158,513	19,916	3,619	3,609	115,890	24,030	602	3	1,169
1919 .	21,759,727	420,184	41,683	146,810	174,974	11,191	32,756	2,905	101,322	14,067	701	2½	753
1920 .	17,082,711	583,636	44,666½	161,340	181,092	13,645	28,167	1,733½	148,472	23,123	1,056	128,90 8	2,870,595
1921 .	18,358,934	284,254	29,470	284,252	123,084	10,108	32,560	884½	236,190	27,727	1,032	144,08 9½	3,555,640
1922 .	18,168,988	392,322	30,089	140,507	187,157	8,388	30,764	942	240,383	19,695	1,080	172,018	4,206,188

Table No. 5.

The following table shows the amount of coal raised, the average number of persons working daily and the death-rates during the years 1913 to 1922 in respect of coal mines under the Indian Mines Act, 1901 :—

Year.	Amount of coal raised.	Average number of persons working daily below and above ground.	Number of deaths below and above ground.	Death-rates.	
				Per 1,000,000 tons raised.	Per 1,000 persons working daily below and above ground.
	Tons.				
1913	15,486,318	133,042	185	11·95	1·39
1914	15,727,631	137,851	145	9·22	1·05
1915	16,352,480	145,537	166	10·15	1·14
1916	16,419,082	143,459	169	10·29	1·18
1917	17,326,384	153,683	163	9·41	1·06
1918	19,847,039	176,269	197	9·93	1·12
1919	21,759,727	190,052	260	11·95	1·37
1920	17,082,711	175,943	172	10·07	0·98
1921	18,358,934	190,647	257	13·99	1·35
1922	18,168,988	184,355	209	11·50	1·13

APPENDIX I—*concld.*

Table No. 6.

The following table shows the aggregate horse power of electric motors installed both on the surface and underground at coal mines under the Indian Mines Act, 1901 :—

Coalfield.	Horse power on surface.						Horse power below ground.					Total horse power of motors installed.
	Winding.	Ventilation.	Haulage.	Coal washing or screening.	Miscellaneous.	Total.	Haulage.	Pumping.	Portable machinery.	Miscellaneous.	Total.	
Assam . .	..	..	..	..	..	..	..	30·24	..	..	30·24	30·24
Central Provinces	..	160	..	50	50	260	20	210	..	..	230	490
Giridih . .	..	..	..	110	58	168	105	850	15	..	970	1,138
Jharia . .	1,645	340	1,065·50	220	842	1,112·50	2,337·50	8,109·50	824	98	11,369	15,481·50
Raniganj . .	1,947	867	835	225	135	4,009	2,295	4,855	374	305	7,829	11,838
Total .	3,592	1,367	1900·50	605	1,085	5549·50	4,757·50	14,054·74	1,213	403	20,423·24	28,977·74

Table No. 7.

The following table shows the aggregate horse power of electric motors installed at all mines under the Indian Mines Act, 1901 :—

Province.	Minerals worked.						Total horse power of motors installed.
	Coal.		Clay.		Sundry Minerals.		
	Number of mines.	Horse power.	Number of mines.	Horse power.	Number of mines.	Horse power.	
Assam . . .	1	30·24	..	..	..	..	30·24
Bengal . . .	35	9,285	..	..	..	..	9,285
Bihar and Orissa .	52	19,172·50	..	..	1	1,677	20,849·50
Burma . . .	..	..	..	..	5	2,040	2,040
Central Provinces .	1	490	2	65	2	149	704
Total .	89	28,977·74	2	65	8	3,866	32,908·74

Table No. 8.

The following table shows the number of electrically driven coal-cutters at work in coal mines under the Indian Mines Act, 1901 :—

Coalfield.	Maker.		Type.			Total Number installed.
	British.	American.	Chain.	Bar.	Percussion.	
Jharia . . .	9	13	13	9	..	22
Raniganj . . .	3	15	16	1	1	18
Total .	12	28	29	10	1	40

APPENDIX II.

ACCIDENTS IN MINES.

Table No. 1.

List of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1922.

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			EXPLOSIONS AND IGNITIONS OF FIRE-DAMP—(*21 deaths*).			
1	23rd January, 1 P.M.	Jeetpur mine, Jamadoba P. O., Bihar and Orissa.	Bengal Iron Co., Ld.	Bauri Mahato, (*m.*), 26, *Surveyor's Chainman.*	Coal	Whilst a party was surveying in a disused gallery an ignition of firedamp took place. Severe burns were received by three persons, one of whom died twenty-four hours later. Inspection and inquiry made.
2	9th March, 2 P.M.	Khost mine, Khost P. O., Baluchistan.	North Western Railway	Gulam Husain, (*m.*), 25, *Coal-cutter.* Niaz Gul, (*m.*), 27, *Shoveller.* Allah Ditta, (*m.*), 21, *Timberman.* Metwali, (*m.*), 17, Bahran, (*m.*), 18, Fakir Mahomed, (*m.*), 16, Abdulla, (*m.*), 18, *Pack-men.* Abdur Rahman, (*m.*), 38, *Timberman.* Kala, (*m.*), 23, *Pack-man.* Pir Khan, (*m.*), 42, *Labourer.*	Coal	The thirteen deceased were killed by an explosion of firedamp in a longwall face in a coal seam. Three persons also were severely injured. It was presumed that the gas was ignited by a defective safety lamp. Inspection and inquiry made.

2				Noor Mahomed, (*m.*), 35, *Fan-man.* Sujan Singh, (*m.*), 30, *Mine-mate.* Mehar, (*m.*), 20, *Fan-man.*	–	(*See previous page*).
3	27th May, 9 P.M.	Damra mine, Kalipahari P. O., Bengal.	Kalipahari Coal Co., Ld.	Oyorali Meah, (*m.*), 50, *Main gallery driver.*	Coal	Deceased carrying an open light went into the face of a gallery and ignited an accumulation of firedamp. He sustained serious burns and died sixteen hours later. Inspection and inquiry made.
4	22nd June, 11 A.M.	New Ghusick mine, Kalipahari P. O., Bengal.	New Ghusick Coal Co.	Puron Mahara, (*m.*), 30, Sona Mahara, (*m.*), 16, *Coal-cutters.*	Coal	Whilst the two deceased were working in an advance heading of small dimensions one of them accidentally struck with his pick and broke the glass of his safety lamp. Firedamp was ignited and they received burns from which they died several hours later. Inspection and inquiry made.
5	5th July, 8 A.M.	Parbelia mine, Dishergarh P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Sukar Singh, (*m.*), 30, Sukar Kahar, (*m.*), 22, Tipon Singh, (*m.*), 52, Sukar Singh, (*m.*), 28, *Main gallery drivers.*	Coal	Whilst two coal-cutters were at work in the face of a narrow advance heading an explosion of firedamp took place. They were both killed. The flame of the burning gas was propagated by coal dust and extended to a point 136 feet from the face where four miners were sitting. These men were severely burnt, and two of them died within a few days. The initial explosion was due to a defective safety-lamp. The gas was considered to have accumulated because two of the deceased had broken down an air-stopping. Inspection and inquiry made.
			FALLS OF ROOF AND SIDES. (*a*) **Falls of roof**—(*57 deaths*).			
6	3rd January, 3-30 P.M.	Dandot mine, Dandot P. O., Punjab.	Rai Sahib Thakur Das, Ramji Das.	Alam Shah, (*m.*), 34, Saidan Shah, (*m.*), 36, *Coal-cutters.*	Coal	The two deceased were crushed by a slab of stone, $3' \times 2' \times 1\frac{1}{2}'$, which fell from a "slip" in the roof—a height of 3 feet. Alam was killed instantly, and Saidan died immediately after he had been extricated. Inspection and inquiry made.
7	5th January, 4 A.M.	Kirkend mine, Kusunda P. O., Bihar and Orissa.	Marine Coal Co., Ld.	Tilak Suri, (*m.*), 45, *Coal-cutter.*	Coal	Deceased and another coal-cutter broke down a fence, and were robbing coal from a barrier when a mass of coal, weighing about 3 tons, fell without warning from two "slips." Deceased was killed instantly. The other man received injuries to his foot. Inspection and inquiry made.
8	6th January, 12-30 P.M.	Ackhalpur mine, Nandi P. O., Bengal.	Hurriladih Coal Co., Ld.	Shova Kole, (*m.*), 28, *Labourer.*	Coal	Deceased entered a fenced area. A piece of roof stone, $5' \times 2'6'' \times 1'$, fell from a height of 11 feet killing him instantly. Inspection and inquiry made.

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*a*) **Falls of roof**—(*57 deaths*)—*contd.*			
9	25th January, 3 P.M.	Dishergarh East mine, Dishergarh P. O., Bengal.	Equitable Coal Co., Ld.	Bajan Manjhi, (*m.*), 21, *Coal-cutter.*	Coal	Deceased went through a fence, and commenced picking up fallen coal in a goaf, when a mass of roof coal, 3′×3′×2′, fell upon him from a height of 8 feet. He was killed instantly. Inspection and inquiry made.
10	31st January, 1-30 P.M.	Albion mine, Nawagarh P. O., Bihar and Orissa.	Albion Coal Co., Ld.	Budhni Turin, (*f.*), 20, *Coal-carrier.*	Coal	Deceased was engaged in loading coal in a gallery, 10 feet high, where coal was being taken down from a "slip" in the roof. A piece of coal, 18″×12″×9″, fell and struck her on the leg, causing a fracture. Gangrene set in, causing fatal results a week later. Inspection and inquiry made.
11	1st February, 10-30 A.M.	Sripore mine, Kalipahari P. O., Bengal.	Lodna Colliery Co., (1920) Ld.	Tuklal Singh, (*m.*), 31, *Propsman.*	Coal	A mechanical contrivance for loading coal tubs underground was being moved into a gallery. Deceased was in front guiding it between the timber supports, and several other men were pushing it along from the rear. The front end struck and knocked out one of the timbers and caused a portion of the stone roof to fall. Deceased was struck by a piece of stone, weighing 5 cwt., which fell from a height of 7 feet, and was killed instantly. Inspection and inquiry made.
12	2nd February, 5 P.M.	Jainty Central mine, Karmatar P. O., Bihar and Orissa.	Jainty Central Colliery, Ld.	Hari Meah, (*m.*), 35, *Coal-cutter.*	Coal	Deceased was cutting down a band of stone which overlay the coal in an underground gallery. A piece of stone, 3′×1′×1′, fell from a height of 5 feet on his foot, causing injuries from which he died ten days later. Inspection and inquiry made.
13	2nd February, 7 P.M.	Jamai-Datla mine, Parasia P. O., Central Provinces.	Rai Sahib Mathura Prosad Motilal & Co.	Mata Badal Kehwat, (*m.*), 50, *Coal-cutter.*	Coal	Deceased went into a fenced-off gallery to cut coal. While doing so he was killed by a mass of roof stone, 12′×6′×9″, which fell on him from a height of 4 feet. Inspection and inquiry made.
14	9th February, 3 P.M.	Ledo Valley mine, Margherita P. O., Assam.	Assam Railways & Trading Co., Ld.	Ainwalla Musalman, (*m.*), 24, *Coal-carrier.*	Coal	Whilst a gang of loading coolies was filling coal from an "opening" or chamber, 20′×20′×13′ high, a mass of stone, weighing 1 cwt., fell from a height of 13 feet. Deceased, in attempting to get clear, was crushed against the side, and sustained a fractured spine. He died an hour later. Inspection and inquiry made.

15	12th February, 2 P.M.	Sharigh mine (leases 76 & 83), Sharigh P. O., Baluchistan.	H. Minck	Ali Mahomed, (*m.*), 25, *Coal-cutter.*	Coal	Whilst at work in a longwall face deceased was killed by a fall of roof shale, 4 feet in diameter and 2 feet thick. Inspection and inquiry made.
16	17th February, 5 P.M.	Godhur mine, Kusunda P. O., Bihar and Orissa.	S. B. Raha & Son	Akloo Meah, (*m.*), 20, *Coal-cutter.*	Coal	Whilst deceased and another man were taking down roof coal, a piece of coal, 12′×3′×2′, suddenly fell on them, crushing deceased so severely that he died shortly afterwards. The other man was injured. Inspection and inquiry made.
17	26th February, 12 P.M.	Ena mine, Jharia P. O., Bihar and Orissa.	North West Coal Co., Ld.	Rupan Singh, (*m.*). 28, *Labourer.*	Coal	Deceased was measuring the length of a prop, preparatory to setting it, when a portion of the roof suddenly fell and killed him almost instantly. Inspection and inquiry made.
18	9th March, 3 P.M.	Ushbul or Murdar mine, Quetta P. O., Baluchistan.	Sorabji & Co.	Kumbar, (*m.*), 30, *Carpenter.*	Coal	Deceased was killed by a fall of roof coal on an underground road.
19	10th March, 6 A.M.	Jotejanaki mine, Toposi P. O., Bengal.	P. K. Chatterjee & Bros.	Petambar Teli, (*m.*), 25, *Coal-cutter.*	Coal	Whilst working in an underground gallery, deceased went to look into the goaf behind the pillar where he was at work. A mass of roof coal, weighing 4 or 5 tons, fell from a height of 15 feet, striking him on the head and killing him instantly. Inspection and inquiry made.
20	17th March, 7 A.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Gobindo Bauri, (*m.*), 32, *Pillaring Sirdar.*	Coal	Deceased was withdrawing props in a goafed area when a portion of the roof fell and knocked out a prop which hit him on the head with such force that he was killed almost instantly. Inspection and inquiry made.
21	17th March, 10 A.M.	Khewra mine, Khewra P. O., Punjab.	Government of India	Bannu, (*f.*), 13, *Salt-carrier.*	Salt	In a chamber, 65 feet high and 40 feet wide, excavated in rock salt, a bridge of rock salt, 8 feet thick and 7 feet wide, had been left to carry a roadway. A small infiltration of water dissolved a portion of the salt and so weakened the support that a mass of several tons of rock salt fell from the underside of the bridge to the floor of the chamber, 45 feet below. Deceased was killed instantly. Inspection and inquiry made.
22	8th April, 10 A.M.	Sudih mine, Sitarampur P. O., Bengal.	Divekar Manilal & Co.	Ratan Dhangur, (*m.*), 45, *Coal-cutter.*	Coal	Deceased entered a gallery which had been fenced off on account of the roof being unsafe, and was struck by a portion of the shale roof 7′×3′×7″, which fell on him from a height of 8 feet. He sustained serious injuries to the skull and died four hours later. Inspection and inquiry made.
23	13th April, 9 A.M.	Bhagaband mine, Jharia P. O., Bihar and Orissa.	Borrea Coal Co., Ld.	Ghanu Bauri, (*m.*), 30, *Timberman.*	Coal	Deceased was withdrawing props in a gallery when some roof stone fell on him. He received injuries from which he died a few hours later. Inspection and inquiry made.
24	14th April, 10-30 A.M.	Bagdigi mine, Jharia P. O., Bihar and Orissa.	Villiers, Ld.	Suki Kamarin, (*f.*), 18, *Coal-carrier.*	Coal	Deceased was employed in a part of the mine where pillars were being extracted. A piece of stone, 5′×4′×8″, fell upon her from the roof at a height of 7 feet. She was killed instantly. Inspection and inquiry de.

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*a*) **Falls of roof**—(*57 deaths*)—*contd.*			
25	26th April, 1 P.M.	South-East Baraboni mine, Charanpur P. O., Bengal.	Maharaja of Cossimbazar	Suki Mejhian, (*f.*), 25, *Coal-carrier.*	Coal	A miner was engaged in getting down overhanging roof coal from a pillar in course of extraction when a mass of coal, 15′×4′×4′, broke away suddenly and swayed out several timbers. Deceased, who was sitting down close by, was struck on the head by one of the falling timbers and died subsequently. Inspection and inquiry made.
26	28th April, 11 P.M.	Keshoram Satgram mine Raniganj P. O., Bengal.	Keshoram Poddar & Co.	Gopi Manjhi, (*m.*), 14, *Labourer.*	Coal	Deceased was working in an underground gallery when a piece of shale, 4′×3′×6″, fell from a height of 7 feet, inflicting injuries which caused death six hours later. Inspection and inquiry made.
27	18th June, 6-30 A.M.	Sijua mine, Sijua P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Fudki Harin, (*f.*), 35, *Coal-carrier.*	Coal	Deceased was killed by a thin band of stone falling from a height of 15 feet. Inspection and inquiry made.
28	10th July, 10 A.M.	Noonodih mine, Jamadoba P. O., Bihar and Orissa.	Bengal Iron Co., Ld.	Chilengi Burhi, (*m.*), 26, *Timberman.*	Coal	Deceased and another man were engaged in timbering the roof, when a mass of coal, 21′×3′×18″, fell from a height of 6½ feet. They were both seriously injured and deceased died within ten days. Inspection and inquiry made.
29	20th July, 3 P.M.	Jotejanaki (Koradanga) mine, Toposi P. O., Bengal.	P. K. Chatterjee & Bros.	Bhola Haree, (*m.*), 14, *Coal-carrier.*	Coal	Deceased was one of a gang of coal-cutters engaged in extracting a pillar of coal. They undercut the pillar too far and brought about the fall of roof stone, 4′×4′×9″ thick, from a height of 14 feet. Deceased was killed instantly. Inspection and inquiry made.
30	26th July 12 A.M.	Golukdih mine, Jharia P. O., Bihar and Orissa.	N. M. Choudhuri	Bheyaram, (*m.*), 13, *Coal-carrier.*	Coal	Deceased was loading coal in a gallery when a piece of coal, 3′×2′×2′, fell from a height of 8 feet. The coal broke on striking the floor, and a piece re-bounded and struck him on the back. He sustained injuries from which he died nineteen days later. Inspection and inquiry made.

31	9th August, 11 A.M.	Bastacolla mine, Jharia P. O., Bihar and Orissa.	New Beerbhoom Coal Co., Ld.	Pushua Ahir, (*m.*), 40, *Coal-cutter.*	Coal	Deceased was standing in a working gallery when a block of roof stone, 20′×15′×4′ thick, fell upon him from a height of 18 feet, and killed him instantly. Inspection and inquiry made.
32	11th August, 9 A.M.	Bhaskajuri mine, Asansol P. O., Bengal.	Burrakur Coal Co., Ld.	Nobin Hazra, (*m.*), 22, Payari Hazra, (*m.*), 21, *Propsmen.*	Coal	Deceased with a gang of coolies was instructed to retimber a roadway where a fall of roof had taken place. He set the coolies to work removing the fallen roof, but neglected to place temporary supports. A further fall of roof took place, killing deceased and injuring five of the gang, one of whom subsequently died. Inspection and inquiry made.
33	13th August, 12-30 A.M.	Chora mine, Chora P. O., Bengal.	N. C. Sircar & Co.	Moni Mejhian, (*f.*), 30, Sukhi Mejhian, (*f.*), 25, *Tub-fillers.*	Coal	Whilst a gang of loading coolies was sitting at the junction of two galleries a mass of roof, 15′×6′×9″, fell from a height of 23 feet. Five persons were injured, two of whom died shortly afterwards. Inspection and inquiry made.
34	16th August, 2 P.M.	Junardeo (No. 1) mine, Pench P. O., Central Provinces.	Rai Sahib H. Verma and M. Kanhaiyalal.	Chhoti Loharin, (*f.*), 40, *Coal-carrier.*	Coal	Deceased was employed in loading coal into baskets in a place where a pillar of coal was being extracted. A piece of coal, 3′×2′×4″, fell between the props from a height of 6½ feet. She was struck on the back and sustained injuries which caused death a fortnight later. Inspection and inquiry made.
35	26th August, 6 P.M.	Bamanband mine, Chora P. O., Bengal.	Ghose and Adhikary	Pran Krishna Bauri, (*m.*), 32, *Coal-cutter.*	Coal	Deceased entered a fenced-off underground gallery, and whilst cutting coal at the side of a pillar, a piece of stone, 5′-6″×1′-3″×1′, fell on him from a height of 7 feet, inflicting injuries from which he died shortly afterwards. Inspection and inquiry made.
36	30th August, 4 P.M.	Jogta mine, Sijua P. O., Bihar and Orissa.	Agabeg Brothers	Dhursan Dhobin, (*f.*), 22, *Coal-carrier.*	Coal	Deceased was in the act of loading a tub in the top section of a seam when a stone band, 2½ feet thick, which formed the floor of the top section and the roof of the bottom section, collapsed over an area of about 150 square feet. Deceased fell with the stone and was killed instantly. Inspection and inquiry made.
37	12th September, 2 P.M.	Hatnol mine, Dishergarh P. O., Bengal.	K. D. Laik and J. K. Devi	Sido Manjhi, (*m.*), 40, *Coal-cutter.*	Coal	Deceased went through a fence to cut floor coal. While cutting the coal he was injured by the fall of a mass of roof stone, 4′×1′-9″×4″ thick, which fell from a height of 9 feet. He died three hours later. Inspection and inquiry made.
38	14th September, 10-30 A.M.	East Nandi mine, Toposi P. O., Bengal.	H. F. Pilcher	Pitamber Gope, (*m.*), 40, Rajaram Koar, (*m.*), 50, Sunder Chahi, (*m.*), 28, *Coal-cutters.*	Coal	The three deceased went through a fence into a goafed area in order to load some fallen roof coal. Whilst doing so a large slab of roof stone, 1 foot thick, fell on them from a height of 10 feet, killing one of them instantly. The two others sustained injuries which terminated fatally. Inspection and inquiry made.
39	20th September, 5-30 P.M.	Nandi mine, Nandi P. O., Bengal.	Adjai Coal Co., Ld.	Kaloo Chamar, (*m.*), 56, *Overman.* Mohan Chamar, (*m.*), 40, *Coal-cutter.*	Coal	The two deceased passed through a fence and entered a goafed area from which the props had just been withdrawn. The roof fell killing them instantly. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*a*) **Falls of roof**—(*57 deaths*)—*concld.*			
40	21st September, 4-30 P.M.	Lamchanchi mine, Kodarma P. O., Bihar and Orissa.	Chota Nagpur Mica Syndicate Ld.	Bishni Chamain, (*f.*), 21, *Labourer.*	Mica	Deceased was killed by a fall of roof in the end of an underground level. Inspection and inquiry made.
41	7th October, 5 P.M.	Borjan mine, Kongon P. O., Assam.	Nazira Coal Co., Ld.	Samir, (*m.*), 32, *Coal-cutter.*	Coal	Deceased whilst robbing coal from a pillar was killed by a fall of coal.
42	7th October, 10 A.M.	North Lohaputti mine, Mohuda P. O., Bihar and Orissa.	East Jamuni Coal Co.	Bishtu, (*m.*), 35, *Coal-cutter.*	Coal	Deceased had left his working place and commenced cutting coal from the side of a pillar when a portion of the roof, weighing about 2 tons, fell on him, killing him almost instantly. Inspection and inquiry made.
43	7th October, 6 P.M.	Bamangarah mine, Nawagarh P. O., Bihar and Orissa.	Seth Mohamedali Mamooji	Later Sing, (*m.*), 26, *Timberman.*	Coal	Deceased was preparing to retimber a part of the roof of a gallery which was unsafe. He neglected to support the roof temporarily before removing the old timbers with the result that a mass of coal and stone, weighing about 2 tons, fell on him killing him almost instantly. Inspection and inquiry made.
44	12th October, 10 A.M.	Choitodih mine, Katrasgarh P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Bultoo, (*m.*), 34, *Coal-cutter.*	Coal	Whilst deceased was working in a gallery, roofstone, 8″ thick, fell over an area of about 160 square feet. He was killed almost instantly. Inspection and inquiry made.
45	17th October, 9 A.M.	Ledo Valley mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Manbahadur Lama, (*m.*), 30, *Labourer.*	Coal	Deceased was killed by a fall of roof coal in an "opening" or chamber.
46	25th October, 4 P.M.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Gee Two, (*m.*), 35, *Miner.*	Tin and Wolfram ores	Deceased was engaged in cleaning out an old adit when he was killed by a mass of schist, weighing several tons, falling upon him. His body was recovered next day. Inspection and inquiry made.
47	30th October, 10-30 P.M.	Tikak mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Churamoni Kamar, (*m.*), 34, *Labourer.*	Coal	Whilst deceased was getting down loose coal after blasting in an "opening" or chamber, some of the coal fell upon him, causing fatal injuries.

48	5th November, 4-30 A.M.	Benahir mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Fulmati Belaspurin, (*f.*), 22, *Coal-carrier.*	Coal	Deceased and five others were working in a gallery when a mass of coal, weighing approximately 1 ton, fell from a height of about 20 feet. Deceased was so severely injured that she died almost immediately. Another person was slightly injured. Inspection and inquiry made.
49	8th November, 2 P.M.	Foley mine, (Lease No. 59), Sharigh P. O., Baluchistan.	Baluchistan Coal Co., Ld.	Mirgul Mahomed, (*m.*), 25.	Coal	Deceased was killed by a fall of roof in an underground working.
50	19th November, 7-30 A.M.	Jamai-Datla mine, Parasia P. O., Central Provinces.	Rai Sahib Mathura Prosad Motilal & Co.	Nand Ram, (*m.*), 30, *Coal-cutter.*	Coal	Deceased was sitting down when a piece of stone, 4′×2′-6″×9″, fell from a concealed "slip" at a height of 3 feet. His head was wedged against the ground, and before he could be rescued he died from suffocation. Inspection and inquiry made.
51	23rd November, 6-30 A.M.	Byauk Chaung mine, Tavoy P. O., Burma.	Burma Finance & Mining Co., Ld.	Lee Yut, (*m.*), 35, *Miner.*	Tin and Wolfram ores.	Deceased was engaged in driving a new adit level close to an old one when a quantity of loose rock fell upon him from the old adit level. He sustained injuries from which he died.
52	24th November. 6 P.M.	Gandhala mine, Dandot P. O., Punjab.	Pandit Gian Chand	Sher, (*m.*), 40, *Carpenter.*	Coal	Whilst deceased was setting timber on an underground road a fall of roof coal took place. He sustained injuries which proved fatal.
53	28th November, 1 A.M.	Namdang mine, Margherita P. O., Assam.	Assam Railways & Trading, Co., Ld.	Ramnath (Marar), (*m.*), 34, *Labourer.*	Coal	Whilst deceased was testing the side in an "opening" or chamber preparatory to drilling a shot hole a mass of stone fell. Both ankles were fractured necessitating amputation. He died five days later.
54	7th December, 1 A.M.	Tirap mine, Margherita P. O., Assam.	Assam Railways & Trading Co., Ld.	Sukhon Mala, (*m.*), 32, *Labourer.*	Coal	Whilst working in an opening the deceased and another person were injured by a mass of roof stone which fell from a height of 21 feet. The deceased died from his injuries ten days later. Inspection and inquiry made.
55	13th December, 1 A.M.	Jainty Central mine, Karmatar P. O., Bihar and Orissa.	Jainty Central Colliery, Ld.	Mohi Mia, (*m.*), 26, *Coal-cutter.*	Coal	Whilst deceased was robbing coal from a pillar he was killed by a mass of stone, 8′×6′×6″, which fell from a height of 8 feet. Inspection and inquiry made.
56	27th December, 9 A.M.	Choitodih mine, Katrasgarh P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Budhan Mistry, (*m.*), 36, *Carpenter.*	Coal	Deceased was struck by a mass of stone, 23′×7′×18″, which fell from the roof—a height of 5′-3″. He was killed instantly. Inspection and inquiry made.
			(*b*) **Falls of side**—(*65 deaths*).			
57	8th January, 4-30 A.M.	Sanctoria mine, Dishergarh P. O., Bengal.	Bengal Coal Co., Ld.	Sankroo Roy, (*m.*), 38, *Coal-cutter.*	Coal	Deceased, in the absence of the sirdar, went to rob coal from a pillar 700-feet distant from his working place. A mass of coal, weighing about 30 cwt. fell on him from the side of the pillar and killed him instantly Inspection and inquiry made.

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*b*) **Falls of side**—(*65 deaths*)—*contd.*			
58	11th January, 7-30 A.M.	Chatabar mine, Mugma P. O., Bihar and Orissa.	Chatabar Colliery, Ld.	Lacha Dosad, (*m.*), 40, *Labourer.*	Coal	A gang of six coolies removed a fence, and was cutting earth near the edge of a quarry. Deceased was carrying debris into the quarry, when a portion of the side, 9′×2′×4′, collapsed, and he fell backwards into the quarry—a distance of 9 feet. He sustained injuries to which he succumbed half-an-hour later. Inspection and inquiry made.
59	13th January, 12 A.M.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance & Mining Co., Ld.	Lum Yoke, (*m.*), 32, *Tributor.*	Tin and Wolfram ores	Whilst deceased was engaged in barring down rock at the entrance to a newly commenced adit—some rock fell from the side and struck him on the leg, fracturing it. He was taken to hospital but succumbed to exhaustion on the following day.
60	28th January, 10 A.M.	Godhur mine, Kusunda P. O., Bihar and Orissa.	S. B. Raha & Son	Kochia Ruhidas, (*m.*), 35, *Coal-cutter.*	Coal	Whilst deceased was robbing coal in a fenced-off gallery he was killed by a block of coal which fell from a height of 10 feet. Inspection and inquiry made.
61	6th February, 2-45 A.M.	Kinuri mine, Nirshachati P. O., Bihar and Orissa.	Kinuri Coal Co., Ld.	Prayag Bauri, (*m.*), 35, *Fitter.*	Coal	Deceased and another fitter had been repairing a pump which was slung on a platform near the bottom of a shaft 237 feet in depth. They were standing in the sinking bucket by the pump platform, when a piece of stone, weighing 78 lb., fell from the side of the shaft and struck deceased upon the head, killing him instantly. Inspection and inquiry made.
62	7th February, 4-30 P.M.	Sq. No. 18-h mine, Kodarma P. O., Bihar and Orissa.	Satya Kinkar Sahana and others.	Latoo Gope, (*m.*), 25, *Miner.*	Mica	Deceased was working in a prospecting pit, 5 feet in diameter and 11 feet deep, when some 7 cwt. of earth and stones fell from a "slip" in the side of the shaft. He received injuries from which he died three hours later. Inspection and inquiry made.
63	8th February, 4 A.M.	North Singaran mine, Toposi P. O., Bengal.	S. C. Chowdhury	Sibon Manjhi, (*m.*), 36, *Coal-cutter.*	Coal	Deceased left his working place and entered a disused gallery, which was fenced-off. A mass of coal fell from the side of a pillar, at a height of 13 feet. A portion of the coal, weighing about 3 cwt., struck deceased, killing him instantly. Inspection and inquiry made.

64	10th February, 6-15 P.M.	Bankola mine, Ukhra P. O., Bengal.	Burrakur Coal Co., Ld.	Mooso Manjhi, (*m.*), 40, *Coal-cutter.*	Coal	Whilst deceased and another miner were cutting coal from the side of an underground gallery, they loosened a mass of coal, weighing about 5 tons. One piece, 4′ 6″×3′×3′, fell over on to deceased, who was sitting down beneath it, killing him instantly. The other miner was seriously injured. Inspection and inquiry made.
65	15th February, 6-45 P.M.	Viceroy mine, Nandi P. O., Bengal.	Mintø Coal Co., Ld.	Kisson Chamar, (*m.*), 45, *Coal-cutter.*	Coal	Deceased was cutting coal from the side of a pillar in course of extraction when a mass of coal, weighing about 1 ton, fell from the side of the pillar at a height of 10 feet on to deceased, causing injuries from which he died next day. Inspection and inquiry made.
66	23rd February, 1-30 P.M.	Joyramdanga mine, Asansol P. O., Bengal.	New Beerbhoom Coal Co., Ld.	Barka Manjhi, (*m.*), 35, *Coal-cutter.*	Coal	Deceased left his working place against orders, and started to cut the side of a pillar in an underground gallery. A mass of coal, weighing about 1½ tons, fell from the side of the pillar at a height of 9 feet and struck deceased, killing him instantly. Inspection and inquiry made.
67	4th March, 4-30 A.M.	Parbelia mine, Dishergarh P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Behari Meah, (*m.*), 35, *Stone-cutter.*	Coal	Deceased with three other stone-cutters was working on a stage suspended at a point 40 feet from the bottom of a shaft 1,489 feet in depth. A piece of stone fell from the side of the shaft above them and struck the protective steel helmet which deceased was wearing. He sustained a fracture of the skull and died several hours later. Inspection and inquiry made.
68	10th March, 11 P.M.	Tikak mine, Margherita P. O., Assam.	Assam Railways & Trading Co., Ld.	Purnananda Thapa, (*m.*), 30, *Coal-carrier.*	Coal	Deceased and another man were filling coal in an "opening" or chamber when a mass of side coal, weighing about 4 tons, fell upon them. Deceased was killed instantly, and the other man sustained serious injuries. Inspection and inquiry made.
69	22nd March, 9 A.M.	Northern mine, Nawagarh P. O., Bihar and Orissa.	Northern Coal Co., Ld.	Manbodh Bilaspuria, (*m.*), 25, *Coal-cutter.*	Coal	Deceased went within a fenced area to rob coal from a partly crushed pillar. A mass of coal, 7′×7′×3′, and weighing about 5 tons, fell on him. He received injuries from which he died almost immediately. Inspection and inquiry made.
70	23rd March, 6-30 P.M.	Busserya mine, Kusunda P. O., Bihar and Orissa.	Busserya Coal Co., Ld.	Banshiram Gowala, (*m.*), 25, *Coal-cutter.*	Coal	Deceased left his working place in a quarry and commenced to rob coal from a portion of the quarry which had been fenced-off on account of overhanging and dangerous side. A mass of coal and stone, weighing about10 cwt., fell upon him from the side at a height of 4 feet. He sustained injuries to which he succumbed about an hour later. Inspection and inquiry made.
71	30th March, 5-45 P.M.	South Lohaputty mine, Mohuda P. O., Bihar and Orissa.	South Lohaputty Coal Co.	Motua Manjhi, (*m.*), 21, *Coal-cutter.*	Coal	Deceased was said to have been robbing coal in a quarry, when a mass of coal and overburden, 30′×14′×4′, and weighing about 77 tons, fell from the side, and partially buried him. He received injuries, which caused death almost immediately. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*b*) **Falls of side**—(*65 deaths*)—*contd.*			
72	31st March, 5-30 P.M.	Jealgora (North) mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Munda Chamar, (*m.*), 28, *Coal-cutter.*	Coal	Deceased was taking down side coal when a portion of the side of the pillar, weighing about 15 tons, fell and, striking deceased, killed him instantly. Inspection and inquiry made.
73	1st April, 2 P.M.	Sohagpur Dhana & Kotmi mine, Shahpur P. O., Central Provinces.	Shaikh Shahabuddin & Sons	Tulsi Kotwor, (*m.*), 25, *Labourer.*	Coal	Deceased was killed by a fall of side in an abandoned surface working. Two other persons were injured. Inspection and inquiry made.
74	22nd April, 12 A.M.	Muraidih mine, Katrasgarh P. O., Bihar and Orissa.	Bholaram Agarwalla	Chotta Mahato, (*m.*), 32, *Coal-cutter.*	Coal	Deceased was engaged in removing overburden from the side of a quarry when a mass of earth, 7′×5′ 6″×18″, fell and buried him. He received injuries from which he died two hours later. Inspection and inquiry made.
75	28th April, 5-30 A.M.	Gopalichuk Head mine, Jharia P. O., Bihar and Orissa.	Gopalichuck Coal Co., Ld.	Bhatoo Gope, (*m.*), 35, *Coal-cutter.*	Coal	Deceased while undercutting coal on the side of a quarry was struck by a fall of coal and stone weighing about 15 cwt. He was severely injured and died soon after. Inspection and inquiry made.
76	28th April, 2 P.M.	Asakuti mine, Katrasgarh P. O., Bihar and Orissa.	Royal Coal Co., Ld.	Jamru Manjhi, (*m.*), 35, *Coal-cutter.*	Coal	Deceased left his working place and began to rob coal from the corner of a pillar. A mass of side coal, weighing about 2 tons, broke away from a "slip," and fell on him killing him instantly. Inspection and inquiry made.
77	28th April, 12-30 P.M.	Pretoria mine, Charanpur P. O., Bengal.	Seebpore Coal Co., Ld.	Kala Manjhi, (*m.*), 25, *Coal-cutter.*	Coal	Deceased went through a fence and commenced robbing coal from the corner of a pillar. A mass of coal, weighing about 15 cwt., broke away from the side of the pillar and fell on him, killing him instantly. Inspection and inquiry made.
78	1st May, 7 P.M.	Sonachora mine, Raniganj P. O., Bengal.	Mangalpur Colliery Co.	Masath Ram (Chana), (*m.*), 22, *Labourer.*	Coal	Deceased, against orders, went to remove overburden in a quarry. A mass of earth, 8′×10′×2′, broke away from the side and fell upon him, partially burying him. He sustained a fracture of the spine and died two days later. Inspection and inquiry made.

79	8th May, 12-30 P.M.	Rauta mine, Ramgarh P. O., Bihar and Orissa.	Surat Kumar Gupta	Bhugla Kurmi, (*m.*), 40, *Labourer.*	Coal	Deceased was killed by a fall of side coal in a quarry.
80	22nd May, 12 A.M.	Mudidih mine, Sijua P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Mirja Chamar, (*m.*), 36, *Coal-cutter.*	Coal	Whilst deceased was employed dressing the sides of an underground gallery a mass of coal, 24′×15′×2′ thick, fell on him. He received injuries from which he died two hours later. Inspection and inquiry made.
81	23rd May, 5 A.M.	Kurhurbaree mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Co.	Lakhia Dusadin, (*f.*), 45, *Coal-carrier.*	Coal	Owing to heavy roof pressure a piece of coal burst from the side of a pillar and struck the deceased on the leg. She sustained a compound fracture and died a few days later. Inspection and inquiry made.
82	27th May, 2-30 P.M.	Chanch mine, Barakar P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Dhakal Roy, (*m.*), 47, *Coal-cutter.*	Coal	Deceased, whilst at work in a quarry, was killed by a fall of some 3 or 4 tons of overburden from a height of 9 feet. Inspection and inquiry made.
83	13th June, 10-45 A.M.	Kodaigaon mine, Khapa P. O., Central Provinces.	Indian Manganese Co., Ld.	Ganpatiappa, (*m.*), 14, Wagon-trimmer.	Manganese ore	Deceased was killed by a fall of side in a quarry.
84	16th June, 3 P.M.	Sripore mine, Kalipahari P. O., Bengal.	Lodna Colliery Co., (1920) Ld.	Khalapa Madrasi, (*m.*),37 *Coal-cutting Machine-man.*	Coal	Whilst deceased was levering loose coal from the side of a pillar the coal came away suddenly. He tried to jump clear but slipped and was struck by a portion of the falling coal. He was killed instantly. Inspection and inquiry made.
85	23rd June, 11-30 P.M.	Sijua mine, Sijua P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Hupni Majhian, (*f.*), 13, *Coal-carrier.*	Coal	Deceased was struck on the head by a piece of coal, weighing about 30 lb., which fell from a height of about 20 feet. She sustained a compound fracture of the skull and succumbed shortly afterwards. Inspection and inquiry made.
86	27th June, 10 A.M.	Jotejanaki (Koradanga) mine, Toposi P. O., Bengal.	P. K. Chatterjee & Bros.	Luchiram Manjhi, (*m.*), 25, *Coal-cutter.*	Coal	Deceased was working on a bench of floor coal 8 feet high. A piece of coal, 3′×2′×2′, which he had undercut, fell. He was knocked down and killed instantly. Two other persons received slight injuries. Inspection and inquiry made.
87	27th June, 3 P.M.	MacLellan mine, Manoharpore P. O., Bihar and Orissa.	Bengal Iron Co., Ld.	Arjoon Gowala, (*m.*), 40, Maroo Kola, (*m.*), 34, Gobarahan Gore, (*m.*), 25, *Miners.*	Iron ore	The three deceased and three others took refuge from a heavy fall of rain under the vertical side of a quarry. A mass of material, weighing about 5 tons and consisting of earth and detached pieces of iron ore, fell suddenly upon them from a height of about 12 feet. Two were killed instantly, another died two days later, a fourth sustained serious injuries and the other two were injured slightly. Inspection and inquiry made.
88	2nd July, 10 A.M.	Lodna mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co., (1920) Ld.	Jinot Chamar, (*m.*), 45, *Coal-cutter.*	Coal	Deceased, while at work in a quarry, was loading coal into a baskett when a piece of coal, 6′×3′×2′, fell from a height of 8 feet. He received injuries from which he died shortly afterwards. Inspection and inquiry made.

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*contd.*			
			(*b*) **Falls of side**—(*65 deaths*)—*contd.*			
89	17th July, 1 P.M.	Kanakok Aing mine, Palaw P. O., Burma.	Yew Shwe Ni	Mg Tun Thin, (*m.*), 20, *Labourer.*	Tin ore	Deceased, with five other coolies, was cutting a ditch near the side of an opencast working, when a mass of side, weighing about 2 tons, fell upon him from a height of 12 feet. He was killed instantly. Inspection and inquiry made.
90	31st July Not known.	Kyine Kyon Kai Daw mine, Karathuri P. O., Burma.	Kyine Kyon	Tan Bai, (*m.*), 30, *Labourer.*	Tin ore	Deceased was killed by a fall of side in an open excavation.
91	25th July, 2 P.M.	Nandi mine, Charanpur P. O., Bengal.	Adjai Coal Co., Ld.	Thatoo Manjhi, (*m.*), 28, *Coal-cutter.*	Coal	Whilst a shothole was being bored in some overhanging coal in an underground gallery 12 feet high, the overhanging coal fell without warning. Deceased who was sitting near by was struck by a piece of falling coal and killed instantly. Another miner received slight injuries. Inspection and inquiry made.
92	5th August, 4 A.M.	Central Kurkend mine, Kusunda P. O., Bihar and Orissa.	Central Kurkend Coal Co., Ld.	Barku Singh, (*m.*), 22, *Coal-cutter.*	Coal	Deceased was robbing coal in a haulage siding when a piece of coal, 9′×3′×2′, fell from the side. He received injuries from which he died twelve hours later. Inspection and inquiry made.
93	11th August, 3 P.M.	Bhowra mine, Jamadoba P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Latha Bauri, (*m.*), 22, *Coal-cutter.*	Coal	Deceased was surreptitiously robbing the side of a pillar when a piece of coal, weighing nearly 10 cwt., fell and crushed his right foot so severely that amputation was necessary. Septic poisoning supervened and he died seven days after the accident. Inspection and inquiry made.
94	15th August, 1-30 P.M.	Bhutgoria mine, Jamadoba P. O., Bihar and Orissa.	Aldih Coal Co., Ld.	Doman Mahato, (*m.*), 32, *Labourer.*	Coal	Deceased was clearing a gallery which had been filled with stone when a large block of side coal, weighing about 2 tons, fell on him, killing him instantly. Inspection and inquiry made.
95	4th September, 4 P.M.	Manaigaon mine, Tharsa P. O., B. N. Rly., Central Provinces.	Central India Mining Co., Ld.	Ganiram Lodhi (*m.*), 45, *Miner.* Wadia Gond, (*m.*), 35, *Not employed.*	Manganese ore	During heavy rain the deceased and three other persons took shelter in a tramway cutting. A mass of mica schist, weighing about 2½ tons, fell from the side. The deceased were buried. One of them was killed instantly. The other was living when extricated, but was injured so severely that he died shortly after. Inspection and inquiry made.

96	15th September, 5-30 P.M.	Dishergarh West mine, Dishergarh P. O., Bengal.	Equitable Coal Co., Ld.	Feely Baurin, (*f.*), 25, *Coal-carrier.*	Coal	Deceased was employed in carrying fallen coal along a level. A mass of coal, weighing about 10 cwt., broke away from the side of a pillar and fell upon her. She was killed instantly. Inspection and inquiry made.
97	16th September, 3 P.M.	Dholia No. 2 mine, Kodarma P. O., Bihar and Orissa.	Ansinha & Co.	Panchoo Turi, (*m.*), 23, *Labourer.*	Mica	Deceased was killedby a fall of side in a prospecting pit.
98	23rd September, 11 A.M.	Sikdardih mine, Giridih P. O., Bihar and Orissa.	Bayra Coal Association	Lidihri Majhian, (*f.*), 12, *Coal-carrier.*	Coal	Whilst a coal-cutter was dressing coal from a pillar in a seam 9 feet thick, a mass of coal, weighing about 30 cwt., fell without warning from a "slip" at a height of 7 feet. Deceased who was sitting down near by was struck by the falling coal and sustained serious injuries to which she succumbed six hours later. The coal-cutter was seriously injured. Inspection and inquiry made.
99	25th September, 3 P.M.	Bokaro Jharia mine, Nawagarh P. O., Bihar and Orissa.	Agarwalla Brothers	Rani Mejhian, (*f.*), 14, *Coal-carrier.*	Coal	The deceased was loading coal on an underground tramline when some 5 cwt. of coal fell on her from the side, causing fatal injuries. Inspection and inquiry made.
100	4th October, 1-45 P.M.	Huntodih mine, Mohuda P. O., Bihar and Orissa.	Huntodih Coal Co., Ld.	Bhola Rai (*m.*), 30, *Coal-cutter.*	Coal	Deceased was cutting coal from the corner of a pillar when a block of coal, weighing about one ton, fell unexpectedly and broke his leg. He received prompt medical attention but died eight days later from heart-failure. Inspection and inquiry made.
101	5th October, 12 A.M.	Joyrampur mine, Jharia P. O., Bihar and Orissa.	B. R. & Co.	Budhai Gudaria, (*m.*), 35, *Coal-cutter.*	Coal	Deceased was in an underground gallery, on a ladder, getting down side coal. About 1 ton of coal came away bringing the ladder and deceased to the ground and killing him instantly. Inspection and inquiry made.
102	6th October, 1 A.M.	Bhowra mine, Jamadoba P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Lahu Kahar, (*m.*), *Unknown*, *Coal-cutter.*	Coal	Deceased left his working place and commenced to rob the side of a pillar. A block of coal, weighing about 1 ton, fell on him causing fatal injuries. Inspection and inquiry made.
103	9th October, 9-30 A.M.	Kalabagh mine, Kalabagh P. O., Punjab.	Government of India	Mir Alam, (*m.*), 48, *Miner.*	Salt	Deceased was buried by a mass of loose earth, weighing about 5 tons, which fell from the side of a quarry. He was killed instantly. Inspection and inquiry made.
104	18th October, 6-30 A.M.	Viceroy mine, Nandi P. O., Bengal.	Minto Coal Co., Ld.	Mangal Manjhi, (*m.*), 45, *Coal-cutter.*	Coal	The workmen had been withdrawn from a working place owing to a roof "weight." Deceased returned to the place, and was killed by a mass of coal which fell from the side. Inspection and inquiry made.
105	24th October, 4-15 P.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Kaila Mara, (*m.*), 30. Bhukhi Aran, (*f.*), 40, Mangie Aran, (*f.*), 9, *Labourers.*	Coal	The three deceased were working in an incline cutting when the side of the cutting to the extent of about 30 tons of stone and earth collapsed and buried them so completely that they died from suffocation before they could be extricated. Two other persons who were in the cutting at the time, narrowly escaped with their lives. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			FALLS OF ROOF AND SIDES—*concld.*			
			(*b*) **Falls of side**—(*65 deaths*)—*concld.*			
106	27th October, 3 P.M.	Bowla mine, Chora P. O., Bengal.	Bowla Coal Co.	Kristo Bauri, (*m.*), 40, *Coal-cutter.*	Coal	Whilst deceased was cutting coal in a gallery he was injured by a piece of falling coal. He died from the effects of blood poisoning six days later. Inspection and inquiry made.
107	27th October, 3-15 P.M.	Lodna mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co., (1920) Ld.	Sashi Baurin, (*f.*), 35, *Coal-carrier.*	Coal	Deceased was loading coal in a gallery when a portion of the roof and side, weighing about 5 tons, fell from a height of from 10 to 20 feet. Deceased sustained severe injuries to the leg and to the head and died a few hours afterwards. Inspection and inquiry made.
108	29th October, Unknown.	Mwe Hauk Chaung mine, Palaw Township P. O., Burma.	Yew Shwe Ni	Chine Wan, (*m.*), 30, *Miner.*	Tin ore	Whilst deceased was prospecting for tin on a hillside a boulder, weighing about 2 tons, slid down and fell upon him. He sustained serious injuries. He was rescued about a day later, but died a few hours afterwards. Inspection and inquiry made.
109	8th December, 3 A.M.	Dishergarh East mine, Dishergarh P. O., Bengal.	Equitable Coal Co., Ld.	Tipee Mejhian, (*f.*), 24, *Coal-carrier.*	Coal	Whilst deceased was loading a basket of coal she was killed by a mass of coal, 3′×2′-6″×2′-6″, which fell from a height of 15 feet. Inspection and inquiry made.
110	9th December, 11 P. M.	Lodna mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co., (1920) Ld.)	Durga Passi, (*m.*), 52, *Munshi.*	Coal	Deceased was sitting at the corner of a pillar into which, on the opposite side, a shot was fired, when a piece of coal, weighing about 1 cwt., was released by the shock of the shot, and, falling from a height of about 20 feet, struck him on the head and killed him almost instantly. Inspection and inquiry made.
111	13th December, 8 A.M.	Bhuggutdih mine, Jharia P. O., Bihar and Orissa.	Bengal Nagpur Coal Co., Ld.	Darsan Chamar, (*m.*), 45, *Coal-cutter.*	Coal	Deceased had entered a fenced-off gallery and had commenced to rob coal from the corner of a pillar, when a block of coal, weighing about 3 tons, fell on him and killed him instantly. Inspection and inquiry made.
112	13th December, 10 A.M.	Bagdigi mine, Jharia P. O., Bihar and Orissa.	Villiers, Ld.	Suki Ram Chamar, (*m.*), 30, Pudu Kurmi, (*m.*), 32, Mohan Teli, (*m.*), 29, *Coal-cutters.*	Coal	The three deceased were engaged in testing and preparing to blast down the top coal of a pillar, 24 feet high, when a large block of coal, weighing about 5 tons, fell and killed them instantly. Inspection and inquiry made.

113	20th December, 10-15 A.M.	Khas Joyrampur mine, Jharia P. O., Bihar and Orissa.	Khengarji Trikoo & Co.	Tej Ram, (*m.*), 25, *Coal-cutter.*	Coal	Deceased had passed through a fence and commenced to rob coal from the side of a pillar, when a large block, weighing approximately 5 tons, fell on him, killing him instantly. Inspection and inquiry made.
114	23rd December, 12 P.M.	Bararee mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Hiromdi, (*f.*), 35, *Coal-carrier.*	Coal	Deceased and three other workmen broke down a fence and lay down to sleep at the corner of a pillar. A mass of coal, weighing approximately 1 ton, fell on them from a height of about 15 feet, killing deceased and injuring the other three. Inspection and inquiry made.
			IN SHAFTS—(*35 deaths*).			
			In shafts—Overwinding—(*9 deaths*).			
115	29th April, 9-15 A.M.	Sodepur mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ld.	(1) Jugal Manjhi, (*m.*), 50, *Coal-cutter ;* (2) Rajoni Kora, (*f.*), 14, *Coal-carrier ;* (3) Ramani Bauri, (*m.*), 30, (4) Nayan Manjhi, (*m.*), 35, (5) Dinoo Karra, (*m.*), 55, *Coal-cutters ;* (6) Nuni Karra, (*f.*), 15, (7) Pusi Karra, (*f.*), 40, *Coal-carriers ;* (8) Suku Karra, (*m.*), 14, *Coal-cutter.*	Coal	Sixteen persons were being lowered in a cage down a shaft 887 feet in depth. The enginemen lost control of the engine and the cage dashed on to the landing platform with great force. All the persons in the cage sustained serious injuries and eight of them died subsequently. Inspection and inquiry made.
116	24th August, 3-30 A.M.	Harladih mine, Jamadoba P. O., Bihar and Orissa.	Equitable Coal Co., Ld.	Mahomed Khalil, (*m.*), 30, *Pumpman.*	Coal	While deceased was descending a shaft the winding engineman lost control of the engine. The descending cage struck the landing platform with such impact that deceased sustained injuries from which he died next day. Inspection and inquiry made.
			In shafts—Ropes and chains breaking—(*5 deaths.*)			
117	3rd February, 8-30 A.M.	Malkera mine, Katrasgarh P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Atma Singh, (*m.*), 35, Raghunath Gosain, (*m.*), 33, Balai Kumar, (*m.*), 27, *Labourers.*	Coal	A steel wire guide rope was being installed in a shaft 364 feet deep. The upper end was secured to the winding rope at the pit top by three temporary clamps. The lower end had been clamped permanently at the pit bottom. The guide rope was being tightened by the winding engine when the clamps slipped and the rope fell down the shaft, killing the deceased and injuring five others who were in the shaft bottom at the time. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			IN SHAFTS—*contd.*			
			In shafts—Ropes and chains breaking—(*5 deaths*)—*contd.*			
118	7th May, 3-30 A.M.	Jibutil mine, Morriston P. O., Madras.	Jibutil (Anantapur) Gold Mines, Ld.	Obanna, (*m.*), 23, *Labourer.*	Gold	Deceased was standing at the bottom of a winze, 40 feet deep, when the windlass rope, ½" diameter, broke during winding, and the bucket, weighing about 2 cwt., fell from the top of the winze on to deceased. He was killed on the spot. Inspection and inquiry made.
119	4th November, 7 A.M.	Ghusick mine, Kalipahari P.O., Bengal.	Ghusick & Muslia Collieries, Ld.	Sriram Mistry, (*m.*), 38, *Fitter.*	Coal	Whilst deceased was standing on the top of the cage at the bottom of a shaft, 450 feet deep, a guide rope broke. He was struck and fatally injured by the falling rope. Inspection and inquiry made.
			In shafts—Whilst ascending or descending by machinery—(*4 deaths*).			
120	10th March, 6-30 P.M.	Gopalichuck West mine, Kusunda P. O., Bihar and Orissa.	Gopalichuck Coal Co., Ld.	Sarban Mudi, (*m.*), 25, *Sinker.*	Coal	A sinking bucket while being raised in a shaft was caught under the flange of a pipe in the pump delivery column, at a point about 300 feet from the bottom of the shaft. The stoppage caused one of the suspension hooks to be pulled straight, releasing the chain and allowing the bucket to tilt. Deceased was thrown out, fell to the bottom of the shaft and was killed. Inspection and inquiry made.
121	20th September, 7 A.M.	Bansdeopur mine, Kusunda P. O., Bihar and Orissa.	Bansdeopur Coal Co., Ld.	Shew Kumar Pandey, (*m.*), 19, *Banksman.*	Coal	Deceased boarded the cage in order to descend a shaft. He shouted to the engineman to lower and the latter did so. When the cage had descended a short distance, deceased stepped off and his leg was caught between the cage and the pit bank. His injuries were so severe that he died three days later. Inspection and inquiry made.
122	1st November, 3-30 P.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Low U, (*m.*), 20, *Mucker.*	Silver-lead-zinc	Deceased was being raised from a winze in a bucket. The bucket bumped against the timbering and this caused him to fall to the bottom of the winze. His injuries were fatal.

123	29th December, 3 A.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Chandra Singh, (*m.*), 30, *Miner.*	Silver-lead-zinc	An injured man was being taken out of the mine. Deceased was supporting the man in the cage, and appears to have fainted. He fell out of the cage and, falling to the bottom of the shaft, was killed instantly.
			In shafts—Falling into the shaft from the surface— (*4 deaths*).			
124	4th April, Unknown.	North Mosila mine, Kalipahari P. O., Bengal	North Moshila Coal Co.	Jahaj Bauri, (*m*), 45, *Pumpman.*	Coal	Deceased fell from the surface to the bottom of a winding shaft, 124 feet deep, and was killed instantly. Inspection and inquiry made.
125	26th June, 9 A.M.	Bhuggutdih mine, Jharia P. O., Bihar and Orissa.	Bengal-Nagpur Coal Co., Ld.	Ia Mahato, (*m.*), 45, *Underground trolley-man.*	Coal	Deceased fell down a shaft, 220 feet deep, and was killed. Inspection and inquiry made.
126	28th June, 11-30 A.M.	South-East Baraboni mine, Charanpur P. O., Bengal.	Maharaja of Cossimbazar	Lakhu Bauri, (*m.*), 17, *Banksman.*	Coal	Deceased, whilst opening the valve of a water bucket by means of a pole, was standing on the brickwork fencing of a shaft 350 feet deep. He overbalanced and fell to the bottom of the shaft. He was killed instantly. Inspection and inquiry made.
127	17th October, 8-15 A.M.	Chanch mine, Barakar P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Foolchand Roy, (*m.*), 35, *Sirdar.*	Coal	Whilst a guide rope was being placed in position in a shaft it bore against a beam placed across the top of the shaft. The beam, on which some planks rested, was displaced, and deceased, who was standing on the planks, fell down the shaft, a distance of 550 feet, and was killed instantly. Inspection and inquiry made.
			In shafts—Falling from part of the way down—(*6 deaths*).			
128	9th February, 6 A.M.	Khost mine, Khost P. O., Baluchistan.	North-Western Railway	Mir Hussain, (*m.*), 30, *Coal-cutter.*	Coal	Whilst a train of trams was descending an inclined shaft deceased attempted to get into the tubs. He slipped and fell down the shaft, sustaining a spinal injury which caused death two days later. Inspection and inquiry made.
129	1st July, 7 A.M.	Teetulmari mine, Sijua P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Charles Leslie Van Ingen, (*m.*), 19, *Mining Pupil.*	Coal	Deceased in stepping on to the cage at a mid-landing slipped and fell between the cage and the shaft side to the shaft bottom, a distance of about 80 feet. He was so severely injured that he died almost immediately. Inspection and inquiry made.
130	5th September, 10-30 A.M.	Loi-an-Central mine, Kalaw P. O., Southern Shan States, Burma.	Coalfields of Burma, Ld.	Law Woo, (*m.*), 27, *Coal-cutter.*	Coal	Whilst at work on a temporary staging in a shaft deceased fell to the bottom of the shaft, 45 feet below, and was killed.
131	9th October, 3 A.M.	Kargali mine, Bokaro P. O., *via* Mohuda, Bihar and Orissa.	Great Indian Peninsula Railway Co.	Mongra, (*m.*), 20, *Banksman.*	Coal	As the bucket was being raised from the staging at an inset in a sinking shaft the deceased fell from it into the sump and was drowned. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			IN SHAFTS—*concld.*			
			In shafts—Falling from part of the way down—(*6 deaths*)—*contd.*			
132	30th November, 6 A.M.	Aldih mine, Sitarampur P. O., Bengal.	Aldih Coal Co., Ld.	Rahon Gope, (*m.*), 40, *Sinker.*	Coal	Deceased while ascending a sinking shaft, 950 feet deep, either fell or jumped out of the bucket and was killed instantly. Inspection and inquiry made.
133	30th December, 2-30 P.M.	Sijua mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Bulan Singh, (*m.*), 38, *Tindal.*	Coal	Deceased attempted to descend a shaft 235 feet deep by sliding down one of the guide ropes to release the cage which had jammed about midway in the shaft. He was unable to control his descent and falling violently on the cage and thence to the shaft bottom, was killed. Inspection and inquiry made.
			In shafts—Things falling from the surface—(*1 death*).			
134	21st January, 2 P.M.	Jharia Khas (Angarpatra) mine, Katrasgarh P. O., Bihar and Orissa.	Trigonait Bros.	Mattu Gope, (*m.*), 38, *Stone-cutter.*	Coal	Whilst deceased was at work sinking a well a piece of timber, 3" diameter × 5' long, which formed part of the landing platform fell from the surface, a distance of 32 feet. He received injuries from which he died next day. Inspection and inquiry made.
			In shafts—Things falling from part of the way down—(*2 deaths*).			
135	30th March, 6 P.M.	Khas Jharia mine, Jharia P. O., Bihar and Orissa.	Seth Khora Ramji	Nomi Gowala, (*m.*), 30, *Onsetter.*	Coal	Deceased was the onsetter at the bottom of a shaft, 306 feet deep. Whilst a loaded tram was being raised in the cage a piece of coal, weighing about 4 lb. fell from the tram and struck him on the head. He sustained a fracture of the base of the skull, and died three days later. Inspection and inquiry made.
136	17th April, 4-30 P.M.	Sijua mine, Sijua P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Gurda Gope, (*m.*), 22, *Stone-cutter.*	Coal	Deceased was in the act of stepping out of a sinking bucket at the bottom of a shaft when a piece of stone fell and struck him on the head, killing him instantly. Inspection and inquiry made.

In shafts—Miscellaneous—(*4 deaths*).

137	5th January, 4-30 A.M.	Kendwadih mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Churaman Gope, (*m.*), 40, *Trolleyman.*	Coal	Deceased, instead of using the pass-bye, attempted to cross the bottom of a shaft. He was crushed under the descending cage, and sustained fatal injuries. Inspection and inquiry made.
138	6th April, 7 A.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Komla Dhobi, (*m.*), 22, *Hookman.*	Coal	Deceased, while the cages were in motion, attempted to fill a vessel with water from the shaft sump. The descending cage struck him and crushed his head so severely that he was killed almost instantly. Inspection and inquiry made.
139	19th October, 12-15 P.M.	Suratand mine, Jharia P. O., Bihar and Orissa.	Suratand Coal Co., Ld.	Imaman, (*m.*), 35, *Fitter.*	Coal	Deceased who was standing on the platform of a shaft pump, 180 feet from the top of the shaft and 2 feet above the surface of the water, fell off the platform into the water and was drowned. Inspection and inquiry made.
140	14th November, 5-30 A.M.	Bankola mine, Ukhra P. O., Bengal.	Burrakur Coal Co., Ld.	Jahuri Bauri, (*m.*), 43, *Bankeman.*	Coal	As a loaded cage in a winding shaft was coming up to the surface the two banksmen took hold of the loaded tub. The cage, however, did not land on the "keps", but descended about eighteen inches, causing both banksmen to slip. Their left legs were crushed between the cage and the landing platform. They were both injured and deceased died within a few minutes. Inspection and inquiry made.

BY EXPLOSIVES—(*9 deaths*).

141	22nd January, 2 P.M.	Kalabagh mine, Kalabagh P. O., Punjab.	Government of India	Ida, (*m.*), 24, *Labourer.*	Salt	Deceased was seriously burnt by an accidental ignition of gun-powder by a fellow-worker. He died from his injuries six days later. Inspection and inquiry made.
142	23rd March, 9-30 P.M.	Ghugus mine, Ballarpur P. O., Central Provinces.	Sir K. C. Daga & Bros. and Sir M. B. Dadabhoy	Babli Malloo, (*m.*), 13, *Labourer.*	Coal	Deceased found a detonator and, whilst he was handling it, it exploded. He sustained injuries to which he succumbed on the next day. Inspection and inquiry made.
143	13th April, 9 A.M.	Baidyanathpur mine, Pandaveswar P. O., Bengal.	Samla Govindpur Collieries, Ld.	Upendra Bauri, (*m.*), 36, *Coal-cutter.*	Coal	Deceased received ten pounds of gun powder to be manufactured into cartridges for use underground. Instead of making the cartridges in the room provided for the purpose he took the powder home to his village. Whilst he and two other miners were making the cartridges, a spark from a pipe or the fire ignited the gunpowder which exploded and burnt them severely. Deceased died four days later as a result of his burns. His companions recovered. Inspection and inquiry made.
144	7th July, 3-30 P.M.	South Bulliaree mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Jahari Painka, (*m.*), 72, *Coal-cutter.*	Coal	Deceased, while leaving his working place, was struck by a piece of coal from a shot fired by a fellow workman. He was killed instantly. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			BY EXPLOSIVES—*(9 deaths)—contd.*			
145	11th August, 1 P.M.	Kargali mine, Bokaro P. O., *viâ* Mohuda, Bihar and Orissa.	Great Indian Peninsula Railway Co.	Jheria, (*m.*), 28, *Quarryman.*	Coal	Deceased, whilst engaged in breaking up with a hammer large stones produced by blasting in a quarry, appears to have struck a dynamite cartridge. An explosion occurred, and he was injured so severely that he died five days later. Inspection and inquiry made.
146	8th September, 5-40 P.M.	Bankola mine, Ukhra P. O., Bengal.	Burrakur Coal Co., Ld.	Banshi Gope, (*m.*), 32, *Coal-cutter.*	Coal	Deceased took a canister containing seven cartridges of gunpowder into his dwelling and placed it beneath an open lamp hanging on the wall. He opened the canister to put in some fuse when sparks from the lamp fell on the gunpowder and ignited it. Deceased was seriously burnt and died three days later. Another man was seriously burnt. Inspection and inquiry made.
147	2nd October, 1-15 P.M.	Khewra mine, Khewra P. O., Punjab.	Government of India	Md. Bux Karim, (*m.*), 25, *Miner.*	Salt	Whilst deceased was drying damp fuse sticks over a lamp they became ignited. He threw them away and they fell on an open powder bag which also took fire. Deceased and two other men were burnt. He died five days later. Inspection and inquiry made.
148	14th December, 12 P.M.	Chandametta mine, Parasia P. O., Central Provinces.	Pench Valley Coal Co., Ld.	Barati Gond, (*m.*), 36, *Coal-cutter.*	Coal	During blasting operations in his working place, deceased went and sat opposite an old gallery which was being connected with the gallery in which shot-firing was being done. He was struck on the head by a piece of coal and sustained a fractured skull. He died six days later. Inspection and inquiry made.
149	27th December, 4-30 P.M.	Jharia Khas mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Gobinda Chamar, (*m.*), 20, *Coal-cutter.*	Coal	Deceased, while ascending a shaft, allowed his lamp and gunpowder tin to fall to the bottom of the cage. The gunpowder ignited and deceased received burns from which he died. Inspection and inquiry made.

			INRUPTIONS OF WATER—(*1 death*).			
150	2nd August, 4 P.M.	Kustore North mine, Kusunda P. O., Bihar and Orissa.	Kosoonda and Nayadee Collieries, Ld.	Samee Kamin, (*f.*), 30, *Coal-carrier.*	Coal	Deceased and nine other women accompanied by a Sirdar were coming out of an incline at the end of the shift when they were met by a sudden inrush of water due to the breaking of a protective bund as the result of heavy rains. Deceased was carried away by the rush of water and was either drowned or died of the injuries she received. The other persons escaped. Inspection and inquiry made.
			HAULAGE—(*20 deaths*).			
151	20th February, 4-30 A.M.	South Govindpur mine, Katrasgarh P. O., Bihar and Orissa.	South Govindpur Colliery Ld.	Tokhan Bhuia, (*m.*), 28, *Coal-cutter.*	Coal	Deceased was standing on a slightly inclined road between loaded tubs when another loaded tub ran away from inbye and collided with the tubs, crushing him so severely that he died soon afterwards. Inspection and inquiry made.
152	20th February, 12 A.M.	South Bulliaree mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Hari Lall, (*m.*), 25, *Haulage Engineman.*	Coal	Deceased was caught by the rope of an endless haulage and pulled on to the haulage pulley. He was so badly mutilated that he died almost instantly. Inspection and inquiry made.
153	22nd February, 1-30 P.M.	Chandametta mine, Pench P. O., Central Provinces.	Pench Valley Coal Co., Ld.	Permasher Nai, (*m.*), 25, *Timberman.*	Coal	Whilst an empty tub was being taken down an incline it ran wild and overturned on the level road at the foot of the incline. Deceased, who was passing, was struck by the tub and fatally injured. Inspection and inquiry made.
154	24th February, 10 P.M.	Khost mine, Khost P. O., Baluchistan.	North Western Railway	Sikander Sulia, (*m.*), 18, *Signaller.*	Coal	Whilst a train of four tubs was being lowered in a shaft or haulage slope inclined at 50 degrees derailment took place. Deceased, who was riding in one of the tubs, was crushed against the shaft timbering and killed. Inspection and inquiry made.
155	2nd March, 4 P.M.	Kirkend mine, Kusunda P. O., Bihar and Orissa.	Kirkend Coal Co.	Rijhu Manjhi, (*m.*), 32, *Coal-cutter.*	Coal	Whilst deceased and others were loading a train of seventeen tubs at the bottom of a dip haulage road one of the tubs became derailed causing the whole train to move downhill. Deceased, in trying to escape was caught between one of the tubs and another train of loaded tubs standing alongside. He was so severely crushed that he died almost immediately. Inspection and inquiry made.
156	7th March, 3 P.M.	Khewra mine, Khewra P. O., Punjab.	Government of India	Alam, (*m.*), 50, *Mule-driver.*	Salt	Deceased was in charge of a train of three loaded trucks. His foot slipped off the brake and was crushed between the brake band and the wheel. He died a few days later. Inspection and inquiry made.
157	29th March, 1-15 P.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Prodhan Singh, (*m.*), 22, *Brakesman.*	Silver-lead-zinc.	Whilst engaged in coupling ore cars deceased was crushed between a car and a timber support. He was killed instantly.

APPENDIX II—*contd.*

Fatal Accidents, 1922—*contd.*

Serial No.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			HAULAGE—(*20 deaths*)—*contd.*			
158	4th April, 8 A.M.	Churulia mine, Charanpur P. O., Bengal.	Churulia Coal Co., Ld.	Dhaju Manjhi, (*m.*), 20, *Coal-cutter.*	Coal	The banksman at the entrance to a haulage incline having omitted to close the stop block and open the runaway switch, an empty tub ran away down the incline and struck deceased, who was walking down the haulage road. He sustained serious internal injuries and died five hours later. Inspection and inquiry made.
159	17th April, 5 P.M.	Bhatdee mine, Mohuda P. O., Bihar and Orissa.	Bengal Bhatdee Coal Co., Ld.	Nakul Pudder, (*m.*), 25, *Trolleyman.*	Coal	Deceased was pulling on the front tub of a set of five in order to assist it round a curve in a haulage road when the tub left the rails and upsetting, pinned him underneath it. He received injuries from which he afterwards died. Inspection and inquiry made.
160	4th May, 8 A.M.	Rajhara mine, Rajhara P. O., Bihar and Orisa.	Bengal Coal Co., Ld.	Ramabatar Noonia, (*m.*), 14, *Coal-carrier.*	Coal	The front tub of a train of empty tubs became detached and ran wild down a haulage incline. It left the rails and struck deceased, causing injuries which resulted fatally next morning. Inspection and inquiry made.
161	16th May, 4 P.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Low Hlu, (*m.*), 22, *Brakesman.*	Silver-lead-zinc.	Whilst deceased was attempting to couple ore cars he was crushed between the cars and a post. He sustained fatal injuries.
162	18th May, 9 A.M.	Bokaro Jharia mine, Nawagarh P. O., Bihar and Orissa.	Agarwalla Bros.	Dalu Chamar, (*m.*), 45, *Coal-cutter.*	Coal	Whilst a train of empty tubs was being lowered down an incline the leading tub became uncoupled and ran wild. Deceased, who was sitting at the entrance to a level, was struck by the tub and died two hours later. Inspection and inquiry made.
163	3rd August, 3-45 P.M.	Khewra mine, Khewra P. O., Punjab.	Government of India	Khan, (*m.*), 35, *Labourer.*	Salt	During the re-railing of some loaded tubs, deceased slipped and was struck by the locomotive. He received injuries from which he died shortly after. Inspection and inquiry made.
164	7th August, 10 A.M.	Sutikdih mine, Patherdih P. O., Bihar and Orissa.	Sutikdih Coal Co., Ld.	Pariag Padder, (*m.*), 35, *Mason.*	Coal	Deceased was presumed to have jumped on to a moving set of tubs which was being hauled up an incline. He struck his head against the roof timbers and received injuries from which he died a few hours later. Inspection and inquiry made.

165	10th August, 4-30 P.M.	Ledo Valley mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Mahomed Makrani, (*m.*), 33, *Labourer.*	Coal	Deceased was run over and killed by a runaway tub on a gravity incline underground.
166	30th August, 5-30 A.M.	Kurkend mine, Kusunda P. O., Bihar and Orissa.	Marine Coal Co., Ld.	Moshari Rajwar, (*m.*), 35, *Trolleyman.*	Coal	Deceased, who was supposed to have been asleep at the foot of a haulage incline, was struck by one of a set of five tubs which became uncoupled at the top and ran wild down the incline. He died from his injuries shortly afterwards. Inspection and inquiry made.
167	6th September, 7-30 A.M.	South Goluckdih mine, Jharia P. O., Bihar and Orissa.	South Goluckdih Coal Co.	Narain Sirdar, (*m.*), 50, *Sirdar.*	Coal	Deceased was struck by one of a set of seven tubs which ran wild on an incline as the result of the breaking of the drawbar of the topmost tub. He was killed almost instantly. Inspection and inquiry made.
168	8th October, 2 P.M.	Mohpani mine, Mohpani P. O., Central Provinces.	Great Indian Peninsula Railway Co.	Kalari Kewat, (*m.*), 14, *Coal-carrier.*	Coal	Deceased was run over and killed by a train of tubs as it entered an underground loading station. Inspection and inquiry made.
169	17th November, 12-15 A.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation Ld.	Chur Singh, (*m.*), 25, *Motor-driver.*	Silver - lead - zinc.	Whilst deceased was driving an electric locomotive on an underground tramway, derailment, due to excessive speed, took place, and he was crushed between the locomotive and the timbering of the roadway. The injuries proved fatal.
170	21st November, 4-30 P.M.	Khewra mine, Khewra P. O., Punjab.	Government of India	Raja, (*m.*), 25, *Mule-driver.*	Salt	Deceased was knocked down and fatally injured by a runaway mule.
			UNDERGROUND MACHINERY—(*2 deaths*).			
171	30th January, 11-45 A.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	B. P. Rander, (*m.*), 25, *Coal-cutter Foreman.*	Coal	Deceased was caught by the cutter picks of a coal-cutting machine and dragged under the coal. He received injuries from which he afterwards died. Inspection and inquiry made.
172	27th June, 3 A.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Kunchi Krishnan Nair, (*m.*), 20, *Miner.*	Silver - lead - zinc.	The belt driving a ventilating fan broke. Deceased, who was standing near by, but outside the fence, was struck by the belt, and sustained fatal injuries.
			SUNDRIES UNDERGROUND—(*8 deaths*).			
173	7th February, 9 P.M.	Bawdwin mine, Namtu P.O., Northern Shan States, Burma.	Burma Corporation, Ld.	Law Kyan, (*m.*), 26, *Miner.*	Silver - lead - zinc.	Deceased fell down an ore chute and sustained fatal injuries.

Fatal Accidents, 1922—*contd.*

Serial Number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			SUNDRIES UNDERGROUND—(*8 deaths*)—*contd.*			
174	17th February, 3-30 A.M.	Khoodia mine, Mugma P. O., Bihar and Orissa.	Khoodia Coal Co., Ld.	Chota Khara Manjhi, (*m.*), 27, *Coal-cutter.*	Coal	Deceased was standing on a loaded tram cutting roof coal, when a piece of coal 18″×12″×12″ fell from a height of 6 feet on to his legs. In trying to avoid it he stepped backwards and fell over the side of the tram on to some pieces of coal. His spine was fractured and he died two hours later. Inspection and inquiry made.
175	5th July, 4 A.M.	Bawdwin mine, Namtu P. O., Northern Shan States, Burma.	Burma Corporation, Ld.	Kaloomarana, (*m.*), 19, *Trucker.*	Silver-lead-zinc.	Deceased was crushed between a truck and the timbering on an underground tramline. His injuries proved fatal.
176	8th July, 4-35 P.M.	Bararee mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Fagua Kandoo, (*m.*), 34, *Trolleyman.*	Coal	Deceased was assisting to replace a derailed tub on an underground tramline. His foot slipped and the wheel of the tub struck him on the leg fracturing it. Three days later he died from shock following amputation. Inspection and inquiry made.
177	12th September, 9 A.M.	Bhalgora mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., Ld.	Baroo Kauri, (*m.*), 22, *Propping Mistry.*	Coal	Deceased and seven other workmen were engaged in setting a prop in a seam 24 feet high. The prop swayed and fell, and, striking another prop 20 feet away, knocked it out. The end of the second prop struck deceased on the head with such force that he was rendered unconscious and died a few hours later from concussion of the brain. Inspection and inquiry made.
178	17th November, 11-30 A.M.	Govindpur mine, Katrasgarh P. O., Bihar and Orissa.	Govindpore Coal Co., Ld.	Chaman Bhuiya, (*m.*), 25, *Trolleyman.*	Coal	Deceased was crushed between tubs on an underground tramway, sustaining injuries from which he died two days later. Inspection and inquiry made.
179	23rd November, 7 A.M.	Bararee mine, Jamadoba, P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Somaru, (*m.*), 18, *Coal-cutter.*	Coal	Deceased was loading coal which had been brought down by blasting, when a large piece of coal, weighing about 4 cwt., slipped down from a heap and fell upon him. He sustained injuries which caused death within a few hours. Inspection and inquiry made.

180	28th November, 9-30 A.M.	Bhalgora mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., Ld.	Somar Kandu, (*m.*), 38, *Labourer.*	Coal	Deceased was assisting seven other coolies in carrying a part of a steam pump when he complained of over exertion. He was taken to hospital where he died three days later from the effect of the overstrain. Inspection and inquiry made.
			SURFACE MACHINERY—(*3 deaths*).			
181	10th July, 6-5 P.M.	Salanpur mine, Salanpur P. O., Bengal.	Borrea Coal Co., Ld.	Dubraj Bauri, (*m.*), 17, *Labourer.*	Coal	Deceased became entangled in a revolving shaft driving workshop machinery. He was killed instantly. Inspection and inquiry made.
182	23rd August, 2-30 P.M.	Bararee mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Tejoo Meah, (*m.*), 56, *Underground Head Sirdar.*	Coal	Deceased was one of four men who were raising a long and heavy column of steam pipes by means of a hand winch. The strain on the rope proved too much for the men and they let go of the handles, one of which struck deceased on the head with such force as to kill him instantly. Inspection and inquiry made.
183	25th October, 12-15 P.M.	Kustore North mine, Kusunda P. O., Bihar and Orissa.	Raneegunge Coal Association, Ld.	Babu Lall, (*m.*), 16, *Labourer.*	Coal	Deceased who was apparently under the influence of drink, attempted to interfere with an endless-rope haulage engine whilst it was in motion. He was caught by the flywheel and killed instantly. Inspection and inquiry made.
			ON SURFACE, RAILWAYS AND TRAMWAYS BELONGING TO THE MINE—(*7 deaths*).			
184	14th January, 10-20 A.M.	Bokaro mine, Bokaro P. O., Bihar and Orissa.	East Indian Railway Co. and Bengal Nagpur Railway Co.	Sobilal Chamar, (*m.*), 32, *Trolleyman.*	Coal	The front coupling of a tub accidently caught in the top of a creeper chain, tilting the rear of the tub violently. The deceased, who clung to the back of the tub, was thrown through or over the fencing, falling to the ground 20 feet below. He died three days later. Inspection and inquiry made.
185	2nd February, 10-30 A.M.	South Kujama mine, Jharia P. O., Bihar and Orissa.	Bagdigi Kujama Collieries, Ld.	Sanichar Dosad, (*m.*), 28, *Trammer.*	Coal	Deceased, while pushing a loaded tub, was struck by a second loaded tub pushed from behind. He received spinal injury from the effects of which he died two days later. Inspection and inquiry made.
186	20th February, 10-45 A.M.	Serampur mine, Giridih, P. O., Bihar and Orissa.	East Indian Railway Co.	Hiro Turi (*m.*), 35, *Labourer.*	Coal	Deceased attempted to cross in front of a locomotive. He was knocked down and run over and sustained injuries from which he died shortly afterwards. Inspection and inquiry made.
187	29th April, 12-30 A.M.	Golukdih mine, Jharia P. O., Bihar and Orissa.	N. M. Choudhuri & Co.	Jhari Bhuia, (*m.*), 30, *Labourer.*	Coal	Deceased attempted to board a colliery locomotive while it was in motion. He fell in front of the wheels and received injuries from which he afterwards died. Inspection and inquiry made.
188	2nd May, 5-30 P.M.	Bokaro mine, Bokaro P. O., Bihar and Orissa.	East Indian Railway Co. and Bengal Nagpur Railway Co.	Bahadur Raot, (*m.*), 42, *Coal-cutter.*	Coal	Deceased was knocked down and run over by a train of six tubs on a surface tramline. He sustained injuries which caused death within a few hours. Inspection and inquiry made.

Fatal Accidents, 1922—*contd.*

Serial Number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Cause of accident and remarks.
			ON SURFACE, RAILWAYS AND TRAMWAYS BELONGING TO THE MINE—(*7 deaths*)—*contd.*			
189	3rd May, 12-30 P.M.	Khoodia mine, Mugma P. O., Bihar and Orissa.	Khoodia Coal Co., Ld.	Surendra Kahar, (*m.*), 35, *Surface trolleyman.*	Coal	Deceased in attempting to mount the front buffer of a loaded tub which was running down a slight gradient, slipped and fell. The front wheel of the tub passed over his leg. He sustained a severe wound and died from tetanus eighteen days later. Inspection and inquiry made.
190	15th October, 8-30 A.M.	Shivrajpur mine, Shivrajpur P. O., Panch Mahals, Bombay Presidency.	Shivrajpur Syndicate, Ld.	Ramadhin Mahadev, (*m.*), 32, *Labourer.*	Manganese ore	A truck ran wild on a slight gradient. Deceased, in trying to stop it, was struck down and killed.
			ELECTRICITY—(*3 deaths*).			
191	19th May, 2-30 A.M.	Aldih mine, Sitarampur P. O., Bengal.	Aldih Coal Co., Ld.	Ratan Gope, (*m.*), 38, *Head Tindal.*	Coal	An electrically driven pump had been lowered to a new position in a dip gallery underground. When all the connections were completed the electric fitter went to a fuse box some 200 yards away to switch on the current. The result was that several persons, who were handling the main cable at the time, received a severe shock and deceased, who was sitting down close to the switch box by the pump, also received a shock and was killed. The accident was due to a defective fuse-box and unsatisfactory earthing arrangements. Inspection and inquiry made.
192	6th July, 5 P.M.	Bhelatand mine, Sijua P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Hanif Meah, (*m.*), 8, *Not employed.*	Coal	Deceased was found in contact with one of the conductors of an overhead transmission line which had broken and was lying on the ground. Death was due to electrocution. Inspection and inquiry made.
193	17th July, 10 A.M.	Jamadoba mine, Jamadoba P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Puarh Singh, (*m.*), 32, *Labourer.*	Coal	Deceased was one of a gang of coolies working on a sub-station in course of erection. Apparently for the purpose of reaching the other side of the building he walked along the top of one of the walls and touched the conductors of an overhead line carrying current at about 500 volts pressure which were only about 5′ 6″ in height at that point. He fell a distance of 16 feet and died almost at once. Inspection and inquiry made.

MISCELLANEOUS ON SURFACE—(*12 deaths*).

194	22nd January, 12 A.M.	Jamehari mine, Searsol P. O., Bengal.	Srimati Nistarini Dassi	Ramprosad Bhor, (*m.*), 45, *Underground Sirdar.*	Coal	Deceased was washing himself outside a bathing tank when the walls of the tank, which were 7 feet high, burst. One of the walls fell on to deceased killing him instantly. Inspection and inquiry made.
195	22nd February, 4 A.M.	Saltore mine, Dishergarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Nitai Kuloo Garai, (*m.*), 38, *Trammer.*	Coal	Deceased went through a fence and jumped into a bunker, containing about 25 tons of sand, in order to recover a piece of cloth which had fallen. He was buried by the running sand and suffocated before he could be rescued. Inspection and inquiry made.
196	1st March, 8-30 A.M.	Hlaygadaung mine, Palauk P. O., Burma.	Hlaygadaung Concessions, Ld.	Bishun Sui, (*m.*), 50, *Labourer.*	Tin & Wolfram ores	Whilst at work in an open excavation in alluvial ground deceased lost his balance and fell a distance of about 7 feet. He sustained ruptures of the spleen and of a blood vessel, and died shortly after.
197	1st April, 10-30 A.M.	Central Kurkend mine, Kusunda P. O., Bihar and Orissa.	Central Kurkend Coal Co., Ld.	Gour Punjabi, (*m.*), 50, *Labourer.*	Coal	Deceased was engaged in fastening a clamp on a guide rope which was being tightened by a winch rope. The winch rope was detached from the guide rope before the clamp was secured. The guide rope slipped through the clamp and struck deceased, who was sitting on two cross-beams supporting the clamp, knocking him down the shaft. He was killed instantly. Inspection and inquiry made.
198	25th April, 11-15 A.M.	Dishergarh West mine, Dishergarh P. O., Bengal.	Equitable Coal Co., Ld.	Ismile Mistry, (*m.*), 32, *Mason.*	Coal	Deceased was working on a ladder reared against the wall of a building. He overbalanced and fell a distance of 21 feet to the ground below, and was killed instantly. Inspection and inquiry made.
199	27th May, 9 P.M.	Lalpeth mine, Chanda P. O., Central Provinces.	J. V. Padamsey & Co.	Ramsahaya, (*m.*), 35, *Peon.*	Coal	Deceased was giving out oil to miners by the light of a lamp. The oil caught fire and his clothes became ignited. He sustained burns which proved fatal.
200	30th June, 3-30 P.M.	Aldih mine, Sitarampur P. O., Bengal.	Aldih Coal Co., Ld.	Raghu Turi, (*m.*), 24, *Labourer.*	Coal	Whilst engaged in oiling the bearings of the pulley on the top of a pithead frame, deceased fell through an opening in the platform on to the banking platform 29 feet below. He sustained injuries from which he died a few hours later. Inspection and inquiry made.
201	30th June, 5 P.M.	Asakuti mine, Katrasgarh P. O., Bihar and Orissa.	Royal Coal Co., Ld.	Tara Manjhi, (*m.*), 24, *Coal-cutter.*	Coal	Deceased was ascending the open cutting of an incline at the end of his day's work when the incline wall and a mass of earth weighing several tons fell on him, and killed him. Inspection and inquiry made.
202	31st July, 1-30 A.M.	Bhaga mine (Lodna Nos. 4 & 5 pits), Jharia P. O., Bihar and Orissa.	Lodna Colliery Co., (1920) Ld.	Alladin, (*m.*), 29, *Labourer.*	Coal	A column of steam pipes in a shaft, 345 feet deep, was being dismantled by raising one pipe at a time by means of a hand winch on the surface. Apparently while being raised the pipe jammed on the rest of the column, and the stress became sufficient to break the winch rope between the winch and the head gear. The loose end of the rope coiled round deceased, who was standing close to the shaft mouth and crushed him so badly that he died almost immediately. Inspection and inquiry made.

Fatal Accidents, 1922—*contd.*

Serial Number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation or person killed.	Name of mineral wrought.	Cause of accident and remarks.
			MISCELLANEOUS ON SURFACE—(*12 deaths*)—*contd.*			
203	3rd September, 11-45 A.M.	Shivrajpur mine, Shivrajpur, P. O., Panch Mahals, Bombay Presidency.	Shivrajpur Syndicate, Ld.	Girdhari Pema, (*m.*), 16, *Labourer.*	Manganese ore	Deceased was in a tunnel leading to a quarry and was about 15 feet from the portal. A rock, weighing some 5 cwt., was dislodged from the side of the quarry by workmen. This rock rolled into the tunnel and struck deceased causing fatal injuries.
204	7th November, 4 A.M.	Searsol Khas mine, Searsol P. O., Bengal.	S. Bagchee & Co., and Rani Shyama Sundari Debi.	Kuchla Bauri, (*m.*), 31, *Pumpman.*	Coal	Whilst deceased was sleeping under a shed the posts supporting the shed collapsed. The roof fell upon him, causing injuries from which he died shortly after. Inspection and inquiry made.
205	10th November, 3 P.M.	Central Kurkend mine, Kusunda P. O., Bihar and Orissa.	Central Kurkend Coal Co., Ld.	Tula Ram, (*m.*), 60, *Labourer.*	Coal	Deceased was cutting earth close to or under a conical stack left for the purposes of measurement when the stack collapsed and fell on him. He sustained an injury to the brain. from the effects of which he died about three weeks later. Inspection and inquiry made.

Fatal Accidents, 1922—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Reason for exclusion.	Cause of accident and remarks.
			DEATHS NOT INCLUDED IN THE STATISTICS—(*51 deaths*).				
1	Between 5th & 7th January, Unknown.	Central Sonardih mine, Katrasgarh P. O., Bihar and Orissa.	Central Sonardih Coal Concern	Buduram Brahmin, (*m.*), 22, *Peon.*	Coal	Not a mining accident	The body of deceased was found floating in a waterlogged incline. Inspection and inquiry made.
2	13th January, 3 P.M.	Shivrajpur mine, Shivrajpur P. O., Panch Mahals, Bombay Presidency.	Shivrajpur Syndicate, Ld.	Jumi Natha, (*f.*), 4.	Manganese ore	Not employed	Deceased accompanied her father who had been instructed to take shelter behind a wall whilst blasting operations were going on at a point some 200 feet distant. She was struck by flying debris and killed. Inspection and inquiry made.
3	19th January 9-40 A.M.	Kutchee Dhana mine, Ramkona P. O., Central Provinces.	Indian Manganese Co., Ld.	Miru, (*f.*), 4.	Manganese ore	Not employed	Deceased was run over whilst attempting to cross a surface tramline. Her injuries proved fatal.
4	23rd January, Unknown.	Jogta mine, Sijua P. O., Bihar and Orissa.	Agabeg Bros.	Ramsuden Singh, (*m.*), 35, *Peon.*	Coal	Not a mining accident	Deceased and another person went to sleep in a room in which an open fire was burning. As all means of ventilation were closed he was asphyxiated. The other person recovered. Inspection and inquiry made.
5	26th January, 5 P.M.	Bansdeopur mine, Kusunda P. O., Bihar and Orissa.	Bansdeopur Coal Co., Ld.	Mohan Meah, (*m.*), 3.	Coal	Not employed	Deceased accompanied his parents who were working in a quarry. He strayed beneath overhanging debris, which fell on him. He received injuries from which he afterwards died. Inspection and inquiry made.
6	27th January, 1-30 A.M.	Ghusick mine, Kalipahari P. O., Bengal.	Ghusick Coal Co.	(1) Huroo Pundit, (*f.*), 6. (2) Muni Pundit, (*m.*), 45, *Brick-maker.*	Coal	Not a mining accident	The deceased were sleeping in their hut, when a spark from a fire outside set on fire the straw thatched roof. Huroo was burnt to death and Muni was severely burnt, dying in hospital two days later. Inspection and inquiry made.
7	29th January, 3 A.M.	Harriladih mine, Jharia P. O., Bihar and Orissa.	Equitable Coal Co., Ld.	Moglar Gwalor, (*m.*), 25, *Peon.*	Coal	Not a mining accident	Deceased lay down in a room in which a coke fire was burning. The doors and windows being closed, there was no ventilation, and he was asphyxiated. Inspection and inquiry made.

Fatal Accidents, 1922—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Reason for exclusion.	Cause of accident and remarks.
			DEATHS NOT INCLUDED IN THE STATISTICS—(*51 deaths*)—*contd.*				
8	6th March, 2 P.M.	Tisra mine, Jharia P. O., Bihar and Orissa.	Amarsingh Gowamal	Somaria Malla, (*f.*), 70	Coal	Not employed	Whilst drawing water from a well about 50 feet deep, and containing 3 feet of water, deceased overbalanced and fell to the bottom. She died a few minutes after being rescued. Inspection and inquiry made.
9	Unknown.	Budroochuck mine, Sijua P. O., Bihar and Orissa.	Budroochuck Coal Mining Co. Ld.	Unknown, (*m.*), *Unknown.*	Coal	Not employed	Deceased was found dead at the bottom of a subsidence caused by mining operations. The subsidence had been fenced. Inspection and inquiry made.
10	19th March, 12-30 P.M.	Ramnagar mine, Pandaveswar P. O., Bengal.	Samla Ramnagar Collieries, Ld.	Kanai Dhangor, (*m.*), 9.	Coal	Not employed	A woman who was carrying a basket of stone out of a shallow cutting on the surface, stumbled and a piece of stone fell out of the basket. The stone struck deceased on the head inflicting serious injury to which he succumbed soon afterwards. Inspection and inquiry made.
11	21st March, 9 P.M.	Kendwadih mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Agni Hazra., (*f.*), 9,	Coal	Not employed	Deceased fell into a boiler feed tank and was drowned. Inspection and inquiry made.
12	31st March, 1 P.M.	New Kusunda mine, Kusunda P. O., Bihar and Orissa.	New Kusunda Colliery, Ld.	Chulan Mahato, (*m.*), 22, *Hookman.*	Coal	Not a mining accident	Whilst bathing in a portion of an abandoned quarry deceased was drowned. Inspection and inquiry made.
13	6th April, 1-30 P.M.	Searsol mine, Raniganj P. O., Bengal.	Searsol Coal Co., Ld.	Parga Manjhi, (*m.*), 35, *Coal-cutter.*	Coal	Not a mining accident	Deceased, despite attempts to prevent him, jumped over the fence around the top of a winding shaft and fell to the bottom, a distance of 217 feet. He was killed instantly. Inspection and inquiry made.
14	12th April, 2 P.M.	Karmatand mine, Nawagarh P. O., Bihar and Orissa.	Sreeram Coal Co.	Suku Mahato, (*m.*), 30, *Agriculturist.*	Coal	Not employed	Deceased was robbing coal in a disused quarry when a mass of overburden, 17′×7′×3′, fell and buried him. He was killed instantly. Inspection and inquiry made.

15	19th April, 7-30 P.M.	Angarpathra mine, Katrasgarh P. O., Bihar and Orissa.	National Coal Co., Ld.	Kazim Khan, (*m.*), 46, *Watchman.*	Coal	Not a mining accident	Whilst in his living quarters the spilling of a lamp caused the clothing of deceased to catch fire. He sustained serious burns and died of heart failure ten days later. Inspection and inquiry made.
16	Found at 2 P.M., on 22nd April.	Durgapur mine, Chanda P. O., Central Provinces.	Chanda Coal Prospecting Syndicate, Ld.	Pochi, (*f.*), 7.	Coal	Not employed	Deceased was found drowned in a water tank. The tank was fenced.
17	3rd May, 7-30 A.M.	Dandot mine. Dandot P. O., Punjab.	Rai Sahib Thakur Das Ramji Das.	Mahomed, (*m.*), 50.	Coal	Not employed	Whilst attempting to cross a self-acting incline on the surface, deceased was run over by a train of tubs. He sustained fatal injuries.
18	28th May, 9-30 P.M.	Ramnagar mine, Kulti P. O., Bengal.	Bengal Iron Co., Ld.	Panchanan Maity, (*m.*), 15. Patal Tamuli, (*m.*), 28. Radha Nath Ghosh, (*m.*), 26.	Coal	Not a mining accident	A train of twenty loaded coal tubs was being drawn from a colliery to an ironworks. When it was passing the points of a branch line the thirteen rear tubs switched up the branch line and became derailed. The deceased persons, who were riding on the tubs against orders, were thrown off and fatally injured. Inspection and inquiry made.
19	31st May, 9 A.M.	South Bulliaree mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Brihospot Dusad, (*m.*), 32, *Onsetter.*	Coal	Not a mining accident	Deceased was found drowned in a boiler feed tank. Inspection and inquiry made.
20	19th June, 6 P.M.	Sijua mine, Sijua P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Somi Beldarin, (*f.*), 8.	Coal	Not employed	Deceased fell into a boiler feed tank and was drowned. Inspection and inquiry made.
21	23rd June, 6-30 P.M.	Kajora mine, Ondal P. O., Bengal.	Guzdar, Kajora Coal Co.	Surendra Bauri, (*m.*), 18. *Labourer.*	Coal	Not a mining accident	Deceased was unloading coal at a colliery wharf when he was struck by lightning and killed instantly. Inspection and inquiry made.
22	26th June, 4-30 A.M.	Dumarkunda mine, Barakar P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Jogin Deghoria, (*m.*), 46.	Coal	Not employed	Deceased was crossing a field when he appears to have tripped over and fallen upon, the bare conductors of an electric transmission line which were sagging close to the ground, owing to a branch having fallen and broken the line at the next span. He was found lying on one of the conductors, and had probably received a shock at approximately 300 volts pressure to earth. Inspection and inquiry made.
23	7th July, 8-30 P.M.	Benidih mine, Jharia P. O., Bihar and Orissa.	Benidih Colliery, Ld.	Phuiny Beldarin, (*f.*), 35, *Coal-carrier.*	Coal	Not a mining accident	A woman, drawing water from a waterlogged quarry, fell into the water and was drowned. Inspection and inquiry made.
24	16th July, 8 A.M.	Simlabahal mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., Ld.	Kashi Ram Kahar, (*m.*), 14, *Labourer.*	Coal	Not a mining accident	Deceased was found drowned in a boiler feed tank. Inspection and inquiry made.

Fatal Accidents, 1922—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Reason for exclusion.	Cause of accident and remarks.
			DEATHS NOT INCLUDED IN THE STATISTICS—(*51 deaths*)—*contd.*				
25	23rd July, 10-30 A.M.	East Nandi mine, Toposi P. O., Bengal.	H. F. Pilcher	Khudu Baurin, (*f.*), 30, *Coal-carrier.*	Coal	Not a mining accident	Deceased was lying asleep beneath a railway wagon with her head on the rail. Another wagon was shunted against the first wagon and caused it to move. The head of deceased was crushed beneath a wheel. She died within a few minutes. Inspection and inquiry made.
26	24th July, 3 A.M.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Wong Hop, (*m.*), 30, *Miner.*	Tin and Wolfram ores	Not a mining accident	Deceased was asleep in a hut situated on a hill side, when a "land-slip" occurred. The hut was demolished and deceased buried. He sustained serious injuries and died a few hours later. Inspection and inquiry made.
27	3rd August, 8-30 A.M.	Hermyingyi mine, Tavoy P. O., Burma.	Burma Finance and Mining Co., Ld.	Mg. Pe, (*m.*), 24, *Miner.*	Tin and Wolfram ores	Not a mining accident	Deceased was proceeding to work up a steep hill side during a heavy rain storm. A "land-slip" occurred, and he was completely buried, sustaining fatal injuries. Inspection and inquiry made.
28	3rd August, 8-30 P.M.	Chowrassie mine, Dishergarh P. O., Bihar and Orissa.	Equitable Coal Co., Ld.	Bucha Bauri, (*m.*), 30.	Coal	Not employed	Whilst passing by after dark deceased fell from the top of a retaining wall 10 feet high. He received injuries from which he died next day. Inspection and inquiry made.
29	5th August, 2 P.M.	Khas Angarpathra mine, Katrasgarh P. O., Bihar and Orissa.	Khas Angarpathra Coal Co.	Janki Kuri, (*m.*), 8.	Coal	Not employed	Deceased was found drowned in a boiler feed tank. The tank was properly fenced. Inspection and inquiry made.
30	11th August, 5-30 P.M.	New Chandore mine, Katrasgarh P. O., Bihar and Orissa.	B. B. Trigunait	Sita Chamarin, (*f.*), 20, *Coal-carrier.*	Coal	Not a mining accident	Deceased fell into a well, 15 feet deep, and was drowned. Inspection and inquiry made.
31	12th August, 5 P.M.	Asakuti mine, Katrasgarh P. O., Bihar and Orissa.	Parascole Coal Co., Ld.	Khari Bilaspuri, (*f.*), 2.	Coal	Not employed	Deceased was found drowned in an artificial excavation, 6 feet long and 2½ feet deep. Inspection and inquiry made.
32	14th August, 4 P.M.	Lodna mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co., (1920) Ld.	Mahuri Musor Bhuiya, (*f.*), 7.	Coal	Not employed	Deceased's leg was caught between the incoming rope and the terminus wheel of a surface haulage. She received injuries from which she died three hours later. Inspection and inquiry made.

33	21st August, 5 P.M.	Banali mine, Raniganj P. O., Bengal.	Parascole Coal Co., Ld.	Samia Kole, (*f.*), 2,	Coal	Not employed	Deceased was found drowned in a pool of flood water, 18 inches deep. Inspection and inquiry made.
34	22nd September, 5 P.M.	Karmatand mine, Nawagarh P. O., Bihar and Orissa.	Sreeram Coal Co.	Mullwa Mahara, (*f.*), 11.	Coal	Not employed	Deceased got over the wall fencing an incline, fell into accumulated water, and was drowned. Inspection and inquiry made.
35	24th September, 6 A.M.	West Bansjora mine, Bansjora P. O., Bihar and Orissa.	West Bansjora Coal Concern	Modho Beldar, (*m.*), 45, *Coal-carrier.*	Coal	Not a mining accident	Deceased, who appears to have been bathing in a water-logged quarry, went out of his depth and was drowned. Inspection and inquiry made.
36	10th October, 4 A.M.	Kajora mine, Ondal P. O., Bengal.	Guzdar, Kajora Coal Co.	Dulali Korani, (*f.*), 2½.	Coal	Not employed	The deceased infant was sleeping beside her mother in a mine when a mass of roof coal, 2′×1′-6″×5″, fell from a height of 13 feet. She received injuries from which she died an hour later. Two other persons were injured. Inspection and inquiry made.
37	21st October, 1 P.M.	Alkusa North mine, Kusunda P. O., Bihar and Orissa.	Raneegunge Coal Association, Ld.	Lutchmania, (*f.*), 6.	Coal	Not employed	Deceased fell into a bathing tank and was drowned. Inspection and inquiry made.
38	27th October, 11-30 A.M.	Katras mine, Katrasgarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Guli Gope, (*m.*), 40, *Carter.*	Coal	Not a mining accident	Deceased, who was apparently bathing at the edge of an old incline which was full of water, fell into the water and was drowned. Inspection and inquiry made.
39	6th November, 2-15 P.M.	Upper Mandra mine, Nawagarh P. O., Bihar and Orissa.	M. G. Roy	Kisari, (*f.*), 6.	Coal	Not a mining accident	Deceased whilst bathing fell into a quarry containing water to a depth of about 12 feet, and was drowned. Inspection and inquiry made.
40	27th November, Unknown.	Bolompore mine, Raniganj P. O., Bengal.	Bolompore Coal Co., Ld.	Gobinda Prasad Goswami, (*m.*), 70.	Coal	Not employed	Deceased was found drowned in an old water-logged shaft, 60 feet deep. Inspection and inquiry made.
41	2nd December, 2 A.M.	Sendra mine, Bansjora P. O., Bihar and Orissa.	Sendra Coal Co., Ld.	Lashman Dosad, (*m.*), 24, *Engine Khalasi.*	Coal	Not a mining accident	Whilst he was sleeping indoors near a fire the clothing of deceased caught fire. He was severely burned and subsequently died.
42	14th December, Unknown.	Ramjibanpur mine, Sitarampur P. O., Bengal.	Ramjibanpur Coal Co.	Jogi Dosad, (*m.*), 30.	Coal	Not employed	The body of deceased was found at the bottom of a disused shaft 75 feet deep. Inspection and inquiry made.

APPENDIX II—*concld.*

Fatal Accidents, 1922—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral wrought.	Reason for exclusion.	Cause of accident and remarks.
			DEATHS NOT INCLUDED IN THE STATISTICS—(*51 deaths*)—*concld.*				
43	23rd December, 5-20 P.M.	Kustore North mine, Kusunda P. O., Bihar and Orissa.	Raneegunge Coal Association, Ld.	Jagna Dosad, (*m.*), 14, *Shale-picker.*	Coal	Not a mining accident	Deceased was run over and killed during shunting operations on a surface railway not belonging to the mine. Inspection and inquiry made.
44	28th December, 8-30 A.M.	West Tetturiya mine, Katrasgarh P. O., Bihar and Orissa.	West Tetturiya Collieries, Ld.	Radhia Bhuiya, (*f.*), 3.	Coal	Not a mining accident	The deceased sustained fatal burning injuries whilst at play near a domestic fire.
45	28th or 29th December, Between 9 P.M. and 6 A.M.	Kendwadih mine, Nawagarh P. O., Bihar and Orissa.	Kendwadih Coal Co.,	Mongal Bhuiya, (*m.*), 36, Budu Bhuiya, (*m.*), 18, Sukar Bhuiya, (*m.*), 20, Jugan Bhuiya, (*m.*), 17. *Labourers.*	Coal	Not a mining accident	The four deceased were detailed to guard a partly unloaded covered truck of tramway sleepers. They went inside the truck, made a fire, closed all openings and went to sleep. Early next morning they were found dead having been suffocated by the fumes from the fire. Inspection and inquiry made.

APPENDIX II—*contd.*

Table No. 2.

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1922.

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				Death-rate per 1,000 persons employed.		
			Number of separate fatal accidents.	Number of deaths.			Number of serious non-fatal accidents.	Number of persons seriously injured.					
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
						A.—COAL.							
Assam	Lakhimpur	3,051	7	7	..	7	49	39	10	49	3·34	..	2·29
	Naga Hills	556	1	1	..	1	1	2	..	2	3·80	..	1·80
	Sibsagar	..	..	..	..	..	..	..	..	..	..	..	..
	Total	3,607	8	8	..	8	50	41	10	51	3·39	..	2·22
Baluchistan	Kalat	30	..	..	..	..	..	..	..	..	..	..	..
	Loralai	35	..	..	..	..	..	..	..	..	..	..	..
	Quetta, Pishin	157	2	2	..	2	..	..	..	..	20·41	..	12·74
	Sibi, Khost	1,032	4	16	..	16	2	3	..	3	27·21	..	15·50
	Total	1,254	6	18	..	18	2	3	..	3	24·79	..	14·35
Bengal	Bankura, Raniganj	161	..	..	..	..	..	..	..	..	..	..	..
	Birbhum ,,	350	..	..	..	..	..	..	..	..	..	..	..
	Burdwan ,,	44,382	45	51	7	58	33	23	10	33	1·91	0·40	1·31
	Total	44,893	45	51	7	58	33	23	10	33	1·89	0·39	1·29
Bihar and Orissa	Hazaribagh: Bokaro	9,947	4	2	2	4	8	2	6	8	0·37	0·44	0·40
	Hazaribagh: Giridih	7,229	3	2	1	3	17	14	3	17	0·45	0·36	0·41
	Hazaribagh: Jharia	2,501	3	3	..	3	1	..	1	1	2·89	..	1·20
	Hazaribagh: Ramgarh	161	1	1	..	1	...	...	...	...	11·90	..	6·21
	Manbhum: Jharia	86,644	80	75	11	86	89	65	26	91	1·50	0·30	0·99
	Manbhum: Raniganj	10,137	9	10	2	12	6	6	2	8	1·79	0·44	1·18
	Palamau, Daltonganj	277	1	1	..	1	1	1	..	1	6·13	..	3·61
	Sambalpur, Hingir-Rampur	797	..	..	..	..	1	1	..	1	..	..	..
	Sonthal Parganas, Jainty	1,242	2	2	..	2	1	1	..	1	2·31	..	1·61
	,, Raniganj	715	..	..	..	..	..	..	..	..	..	..	..
	Total	119,650	103	96	16	112	124	90	38	128	1·40	0·31	0·94
Burma	Southern Shan States	65	1	1	..	1	..	..	..	..	26·32	..	15·38
Central Provinces	Betul	133	1	1	..	1	..	..	..	..	13·33	..	7·52
	Chanda, Ballarpur	2,650	2	1	1	2	3	1	2	3	0·57	1·13	0·75
	Chhindwara, Pench Valley	8,286	5	5	..	5	11	8	3	11	1·01	..	0·60
	Narsinghpur, Mohpani	2,036	1	1	..	1	6	5	1	6	0·75	..	0·49
	Yeotmal	95	..	..	..	..	..	..	..	..	..	..	..
	Total	13,200	9	8	1	9	20	14	6	20	0·98	0·20	0·68

APPENDIX II—*contd.*

Table No. 2—*contd.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1922—*contd.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				Death-rate per 1,000 persons employed.		
			Number of separate fatal accidents.	Number of deaths.			Number of serious non-fatal accidents.	Number of persons seriously injured.					
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
						A.—COAL—*contd.*							
Punjab	Jhelum	1,390	2	3	..	3	2	2	..	2	3·61	..	2·16
	Mianwali	183	..	..	..	..	6	1	5	6	..	..	..
	Shahpur	113	..	..	..	..	..	..	..	..	..	..	..
	Total	1,686	2	3	..	3	8	3	5	8	3·19	..	1·78
	GRAND TOTAL (Coal)	184,355	174	185	24	209	237	174	69	243	1·72	0·31	1·13
						B.—MICA.							
Bihar and Orissa	Bhagalpur	..	..	..	..	..	..	..	..	..	..	..	..
	Gaya	1,518	..	..	..	..	..	..	..	..	..	..	..
	Hazaribagh	7,877	3	3	..	3	1	1	..	1	0·63	..	0·38
	Monghyr	109	..	..	..	..	..	..	..	..	..	..	..
	Sambalpur	115	..	..	..	..	..	..	..	..	..	..	..
	Total	9,619	3	3	..	3	1	1	..	1	0·53	..	0·31
Madras	Nellore	929	..	..	..	..	..	..	..	..	..	..	..
	Nilgiris	32	..	..	..	..	..	..	..	..	..	..	..
	Total	961	..	..	..	..	..	..	..	..	..	..	..
Rajputana	Ajmer-Merwara	525	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (Mica)	11,105	3	3	..	3	1	1	..	1	0·45	..	0·27
						C.—MANGANESE ORE.							
Bombay	Panch Mahals	1,605	2	..	2	2	5	1	4	5	..	5·19	1·25
Central Provinces	Balaghat	4,355	..	..	..	..	5	5	1	6	..	..	..
	Bhandara	978	..	..	..	..	1	..	1	1	..	..	..
	Chhindwara	958	..	..	..	..	2	..	2	2	..	..	..
	Jubbulpore	26	..	..	..	..	..	..	..	..	..	..	..
	Nagpur	3,585	2	3	..	3	1	..	1	1	1·16	..	0·84
	Total	9,902	2	3	..	3	9	5	5	10	0·41	..	0·30
Madras	Vizagapatam	518	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (Manganese ore).	12,025	4	3	2	5	14	6	9	15	0·34	0·63	0·42

APPENDIX II—*contd.*

Table No. 2—*contd.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1922—*contd.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				DEATH-RATE PER 1,000 PERSONS EMPLOYED.		
			Number of separate fatal accidents.	Number of deaths.			Number of serious non-fatal accidents.	Number of persons seriously injured.					
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
			D.—LIMESTONE.										
Burma	Northern Shan States	30	..	..	..	..	..	..	..	..	..	..	..
Central Provinces	Bilaspur	316	..	..	..	..	..	..	..	..	..	..	..
	Jubbulpore-Katni	3,840	..	..	..	..	1	..	1	1	..	..	..
	TOTAL	4,156	..	..	..	..	1	..	1	1	..	..	..
	GRAND TOTAL (LIMESTONE).	4,186	..	..	..	..	1	..	1	1	..	..	..
			E.—SALT.										
Punjab	Jhelum	1,210	5	4	1	5	5	5	..	5	3·43	22·22	4·13
	Mianwali	69	2	2	..	2	..	..	..	..	28·98	..	28·98
	Shahpur	83	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (SALT)	1,362	7	6	1	7	5	5	..	5	4·56	22·22	5·14
			F.—GEMS.										
Burma	Katha (Rubies, etc.)	1,254	..	..	..	..	1	..	1	1	..	..	..
			G.—SLATE.										
Bihar and Orissa	Monghyr	420	..	..	..	..	..	..	..	..	..	..	..
Punjab	Gurdaspur	..	..	..	..	..	..	..	..	..	..	..	..
	Gurgaon	154	..	..	..	..	..	..	..	..	..	..	..
	Kangra	164	..	..	..	..	..	..	..	..	..	..	..
	TOTAL	318	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (SLATE)	738	..	..	..	..	..	..	..	..	..	..	..
			H.—GOLD.										
Bihar and Orissa	Singhbhum	..	..	..	..	..	..	..	..	..	..	..	..
Madras	Anantapur	509	1	1	..	1	2	..	2	2	9·43	..	1·96
	GRAND TOTAL (GOLD)	509	1	1	..	1	2	..	2	2	9·43	..	1·96
			I.—IRON ORE.										
Bihar and Orissa	Puri	..	..	..	..	..	..	..	..	..	..	..	..
	Singhbhum	1,730	1	3	..	3	..	..	..	..	2·65	..	1·73
	TOTAL	1,730	1	3	..	3	..	..	..	..	2·65	..	1·73
Burma	Mandalay	46	..	..	..	..	..	..	..	..	..	..	..
	Northern Shan States	364	..	..	..	..	2	..	2	2	..	..	..
	TOTAL	410	..	..	..	..	2	..	2	2	..	..	..
Rajputana	Ajmer-Merwara	30	...	...	...	...	...	..	...	...	...	...	...
	GRAND TOTAL (IRON ORE)	2,170	1	3	..	3	2	..	2	2	2·17	..	1·38

APPENDIX II—*contd.*

Table No. 2—*contd.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1922—*contd.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				DEATH-RATE PER 1,000 PERSONS EMPLOYED.		
			Number of separate fatal accidents.	Number of deaths.			Number of serious non-fatal accidents.	Number of persons seriously injured.					
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
		J.—WOLFRAM ORE.											
Burma	Mergui	..	..	..	..	..	..	..	..	..	..	..	..
	Tavoy	199	2	2	..	2	2	1	1	2	11·98	..	10·05
	Thaton	..	..	..	..	..	..	..	..	..	..	..	..
	TOTAL	199	2	2	..	2	2	1	1	2	11·98	..	10·05
	GRAND TOTAL (WOLFRAM ORE).	199	2	2	..	2	2	1	1	2	11·98	..	10·05
		K.—MAGNESITE.											
Madras	Salem	1,077	..	..	..	..	..	..	..	..	..	..	..
		L.—CHROMITE ORE.											
Baluchistan	Zhob	284	..	..	..	..	2	1	1	2	..	..	..
Bihar and Orissa	Singhbhum	195	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (CHROMITE ORE).	479	..	..	..	..	2	1	1	2	..	..	..
		M.—COPPER ORE.											
Bihar and Orissa	Singhbhum	2,744	..	..	..	..	2	..	2	2	..	..	..
Central Provinces	Balaghat	21	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (COPPER ORE).	2,765	..	..	..	..	2	..	2	2	..	..	..
		N.—BAUXITE.											
Central Provinces	Jubbulpore	120	..	..	..	..	..	..	..	..	..	..	..
		O.—CLAY.											
Bihar and Orissa	Manbhum	10	..	..	..	..	..	..	..	..	..	..	..
	Palamau	57	..	..	..	..	..	..	..	..	..	..	..
	TOTAL	67	..	..	..	..	..	..	..	..	..	..	..
Central Provinces	Jubbulpore	619	..	..	..	..	..	..	..	..	..	..	..
Delhi	Delhi	66	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (CLAY)	752	..	..	..	..	..	..	..	..	..	..	..

APPENDIX II—*contd.*

Table No. 2—*concld.*

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1922—*concld.*

Province.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.				Death-rate per 1,000 persons employed.		
			Number of separate fatal accidents.	Number of deaths.			Number of serious non-fatal accidents.	Number of persons seriously injured.					
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of persons injured.	Below ground.	Above ground.	Below and above ground.
		P.—LEAD ORE.											
Burma	Northern Shan States	1,820	8	8	..	8	23	20	4	24	6·25	..	4·40
Central Provinces	Drug	34	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (Lead ore).	1,854	8	8	..	8	23	20	4	24	6·16	..	4·31
		Q.—TIN ORE.											
Burma	Mergui	614	4	3	1	4	..	..	..	..	5·76	10·75	6·51
	Tavoy	2,306	1	1	..	1	..	..	..	..	0·56	..	0·43
	Thaton	38	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (Tin ore)	2,958	5	4	1	5	..	..	..	..	1·72	1·59	1·69
		R.—STEATITE.											
Central Provinces	Jubbulpore	41	..	..	..	..	..	..	..	..	..	..	..
Madras	Nellore	25	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (Steatite)	66	..	..	..	..	..	..	..	..	..	..	..
		S.—APATITE.											
Bihar and Orissa	Singhbhum	89	..	..	..	..	..	..	..	..	..	..	..
		T.—GRAPHITE.											
Central Provinces	Betul	5	..	..	..	..	..	..	..	..	..	..	..
		U.—OCHRE.											
Bihar and Orissa	Puri	34	..	..	..	..	..	..	..	..	..	..	..
Central Provinces	Jubbulpore	215	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (Ochre)	249	..	..	..	..	..	..	..	..	..	..	..
		V.—BARYTES.											
Madras	Kurnool	194	..	..	..	..	..	..	..	..	..	..	..
	GRAND TOTAL (All Mines).	228,511	205	215	28	243	292	208	92	300	1·57	0·31	1·06

APPENDIX II—*contd.*

Table No. 3.

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1922, classified according to the age and sex of the workers.

Mineral.	Province and mineral field.	Number of separate fatal accidents.	Number of deaths. Below Ground. Adult males.	Adult females.	Children (under 12).	Total.	Above Ground. Adult males.	Adult females.	Children (under 12).	Total.	Total below and above ground.
Coal	Assam . Lakhimpur	7	7	..	..	7	..	..	..	..	7
	Assam . Naga Hills	1	1	..	..	1	..	..	..	..	1
	Total	8	8	..	..	8	..	..	..	..	8
	Baluchistan . Quetta, Pishin	2	2	..	..	2	..	..	..	..	2
	Baluchistan . Sibi, Khost	4	16	..	..	16	..	..	..	..	16
	Total	6	18	..	..	18	..	..	..	..	18
	Bengal, Burdwan, Raniganj	45	43	8	...	51	7	..	..	7	58
	Bihar and Orissa. Hazaribagh . Bokaro	4	2	..	..	2	2	..	..	2	4
	Bihar and Orissa. Hazaribagh . Giridih	3	..	2	..	2	1	..	..	1	3
	Bihar and Orissa. Hazaribagh . Jharia	3	1	2	..	3	..	..	..	..	3
	Bihar and Orissa. Hazaribagh . Ramgarh	1	1	..	..	1	..	..	..	..	1
	Bihar and Orissa. Manbhum . Jharia	80	65	9	1	75	10	..	1	11	86
	Bihar and Orissa. Manbhum . Raniganj	9	10	..	..	10	2	..	..	2	12
	Palamau, Daltonganj	1	1	..	..	1	..	..	..	..	1
	Sambalpur, Hingir-Rampur.	..	..	..	..	..	..	..	..	..	..
	Sonthal Parganas . Jainty	2	2	..	..	2	..	..	..	..	2
	Sonthal Parganas . Raniganj.	..	..	..	..	..	..	..	..	..	..
	Total	103	82	13	1	96	15	..	1	16	112
	Burma, Southern Shan States	1	1	..	..	1	..	..	..	..	1
	Central Provinces . Betul	1	1	..	..	1	..	..	..	..	1
	Central Provinces . Chanda	2	1	..	..	1	1	..	..	1	2
	Central Provinces . Chhindwara	5	4	1	..	5	..	..	..	..	5
	Central Provinces . Narsingh-pur.	1	1	..	..	1	..	..	..	..	1
	Total	9	7	1	..	8	1	..	..	1	9
	Punjab, Jhelum	2	3	..	..	3	..	..	..	..	3
	Total (Coal)	174	162	22	1	185	23	..	1	24	209

APPENDIX II—*contd.*

Table No. 3—*concld.*

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1922, classified according to the age and sex of the workers—*concld.*

Mineral.	Province and mineral field	Number of separate fatal accidents.	Number of deaths. Below Ground. Adult males.	Adult females.	Children (under 12).	Total.	Above Ground. Adult males.	Adult females.	Children (under 12).	Total.	Total below and above ground.
Mica	Bihar and Orissa, Hazaribagh	3	2	1	..	3	..	..	..	..	3
	Madras, Nellore	..	..	..	..	..	..	..	..	..	..
	Total (Mica)	3	2	1	..	3	..	..	..	..	3
Manganese Ore	Bombay, Panch Mahals	2	..	..	..	..	2	..	..	2	2
	Central Provinces, Nagpur	2	3	..	..	3	..	..	..	..	3
	Total (Manganese Ore)	4	3	..	..	3	2	..	..	2	5
Salt	Punjab—Jhelum	5	3	1	..	4	1	..	..	1	5
	Punjab—Mianwali	2	2	..	..	2	..	..	..	..	2
	Total (Salt)	7	5	1	..	6	1	..	..	1	7
Gold	Madras, Anantapur.	1	1	..	..	1	..	..	..	..	1
Iron Ore	Bihar and Orissa, Singhbhum	1	3	..	..	3	..	..	..	..	3
Wolfram Ore	Burma—Mergui	..	..	..	..	..	..	..	..	..	..
	Burma—Tavoy	2	2	..	..	2	..	..	..	..	2
	Total (Wolfram Ore)	2	2	..	..	2	..	..	..	..	2
Tin Ore	Burma—Mergui	4	3	..	..	3	1	..	..	1	4
	Burma—Tavoy	1	1	..	..	1	..	..	..	..	1
	Total (Tin Ore)	5	4	..	..	4	1	..	..	1	5
Lead Ore	Burma, Northern Shan States	8	8	..	..	8	..	..	..	..	8
	GRAND TOTAL (ALL MINERALS)	205	190	24	1	215	27	..	1	28	243

APPENDIX II—*concld.*

Table No. 4.

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1922, classified according to cause of accident.

Mineral worked.	Number of separate fatal accidents.	Number of persons killed.												Death-rate per 1,000 persons employed.		
		Explosions of fire-damp.	Falls of roof.	Falls of side.	In shafts.	Suffocation by gases.	By explosives.	Irruptions of water.	Haulage.	Miscellaneous below ground.	Surface.	Electricity.	Total deaths.	Below ground.	Above ground.	Below and above ground.
Coal	174	21	53	52	32	..	7	1	14	7	19	3	209	1·72	0·31	1·13
Clay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gold	1	..	..	..	1	..	..	..	..	..	..	..	1	9·43	..	1·96
Iron Ore	1	..	..	3	..	..	..	..	..	..	..	..	3	2·17	..	1·38
Lead Ore	8	..	..	..	2	..	..	..	3	3	..	..	8	6·16	..	4·31
Manganese Ore	4	..	..	3	..	..	..	..	..	..	2	..	5	0·34	0·63	0·42
Mica	3	..	1	2	..	..	..	..	..	..	..	..	3	0·45	..	0·27
Salt	7	..	1	1	..	..	2	..	3	..	..	..	7	4·56	22·22	5·14
Tin Ore	5	..	..	4	..	..	..	..	..	..	1	..	5	1·72	1·59	1·69
Wolfram Ore	2	..	2	..	..	..	..	..	..	..	..	..	2	11·98	..	10·05
Total 1922	205	21	57	65	35	..	9	1	20	10	22	3	243	1·57	0·31	1·06
Total preceding year.	232	15	81	91	22	..	20	..	32	12	20	..	293	1·72	0·26	1·17
Difference	—27	+6	—24	—26	+13	..	—11	+1	—12	—2	+2	+3	—50	—0·15	+0·05	—0·11

APPENDIX III.

PROSECUTIONS UNDER THE INDIAN MINES ACT, 1901.

Statement of prosecutions under the Indian Mines Act, 1901, during the year 1922.

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number convicted.	Numbers of rules and sections of the Act contravened.	Remarks.
Assam	Lakhimpur	1	1	...	Section 21, Special Rule 71	*Accused was acquitted.*
Bengal	Bankura	1	1	...	Section 20, Rules 1, 3 and 7 of Notification No. 864-68—20, dated the 10th March 1904.	*Accused was acquitted.*
	Burdwan	1	1	1	Section 13 (1) and Section 2 0, Rule 47 of Notification No. 2968—82, dated the 21st April 1906, as amended by Notification No. 894—82, dated the 26th January 1907, and Notification No. 9709—131, dated the 23rd October 1908.	
	Do.	1	2	1	Section 15(2) and Section 20, Rule 7 of Notification No. 864-68—20, dated the 10th March 1904.	*One accused was acquitted.*
	Do.	1	2	1	Section 20, Rules 1, 3 and 9 of Notification No. 864-68—20, dated the 10th March 1904.	*One accused was discharged.*
	Do.	1	2	2	Section 20, Rules 2, 19 and 20 of Notification No. 864-68—20, dated the 10th March 1904.	
	Do.	1	2	2	Section 20, Rules 3 and 7 of Notification No. 864-68—20, dated the 10th March 1904.	
	Do.	1	2	1	Section 20, Rules 3, 7 and 19 of Notification No. 864-68—20, dated the 10th March 1904.	*Case against one accused was dismissed.*
	Do.	1	1	...	Section 20, Rule 19 of Notification No. 864-68—20, dated the 10th March 1904, and Rule 3 of Bengal Government Notification No. 3970-Com., dated the 28th August 1918.	*Accused was acquitted.*
	Do.	1	1	...	Section 21, Special Rule 4	*Withdrawn.*
	Do.	1	2	2	„ „ „ Rules 38, 40 and 41	
	Do.	1	1	...	„ „ „ Rules 39 and 40	*Case dismissed.*
	Do.	1	1	...	„ „ „ Rules 64 to 67	*Withdrawn.*
	Do.	1	1	1	„ „ „ Rule 78	
	Hazaribagh	7	2	...	Section 20, Rule 1 of Notification No. 11793—103, dated the 30th December 1908, as amended by Notifications No. 5072—113, dated the 1st July 1916, and No. M.-498, dated the 29th June 1922.	*Withdrawn.*
	Do.	6	6	6	Do. do. do.	
Bihar and Orissa	Manbhum	1	2	2	Section 13 (1)	
	Do.	1	1	1	Section 13 (1) and Section 20, Rule 46 of Notification No. 864-68—20, dated the 10th March 1904.	
	Do.	1	1	1	Section 13 (1) and Section 20, Rule 47 of Notification No. 864-68—20, dated the 10th March 1904.	

APPENDIX III—*contd.*

PROSECUTIONS UNDER THE INDIAN MINES ACT, 1901—*contd.*

Statement of prosecutions under the Indian Mines Act, 1901, during the year 1922—*contd.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number convicted.	Numbers of rules and sections of the Act contravened.	Remarks.
Bihar and Orissa —*concld.*	Manbhum	1	1	...	Section 15 (1)	*Accused was acquitted.*
	Do.	1	1	1	Do.	
	Do.	1	1	...	Section 16	*Case dismissed.*
	Do.	1	3	2	Section 20, Rule 3 of Notification No. 864-68—20, dated the 10th March 1904.	*One accused was acquitted.*
	Do.	1	1	1	Section 20, Rule 4 of do. do.	
	Do.	1	1	1	Section 20, Rules 3 and 7 of do. do.	
	Do.	1	2	2	Section 20, Rules 3 and 7 of Notification No. 864-68—20, dated the 10th March 1904, and Rule 3 of Bihar and Orissa Government Notification No. 11761-M., dated the 23rd August 1918.	
	Do.	1	2	1	Section 20, Rules 3, 4 and 17 of Notification No. 864-68—20, dated the 10th March 1904.	*Case against one accused withdrawn.*
	Do.	1	2	2	Section 20, Rules 3, 7 and 19 of do. do.	
	Do.	1	2	2	Section 20, Rule 7 of do. do.	
	Do.	1	2	2	Section 20, Rules 7 and 13 of do. do. and Rule 3 of Bihar and Orissa Government Notification No. 11761-M., dated the 23rd August 1918.	
	Do.	1	1	1	Section 20, Rules 7 and 22 of Notification No. 864-68—20, dated the 10th March 1904, and Rule 2 of Bihar and Orissa Government Notification No. 11761-M., dated the 23rd August 1918.	
	Do.	1	1	1	Section 20, Rule 19 of Notification No. 864-68—20, dated the 10th March 1904.	
	Do.	1	1	1	Section 20, Rule 1 of Notification No. 11793—103, dated the 30th December 1908, as amended by Notifications No. 5072—113, dated the 1st July 1916, and No. M.-498, dated the 29th June 1922.	
	Do.	1	1	1	Section 21, Special Rule 4	
	Do.	1	1	1	„ „ „ „ 5	
	Do.	1	1	...	„ „ „ „ 5	*Accused absconded.*
	Monghyr	1	2	1	Section 20, Rule 1 of Notification No. 11793—103, dated the 30th December 1908, as amended by Notifications No. 5072—113, dated the 1st July 1916, and No. M.-498, dated the 29th June 1922.	*One accused acquitted.*
	Do.	1	2	1	Do. do. do.	*Do.*
	Do.	1	2	1	Do. do. do.	*Do.*
	Do.	1	3	...	Do. do. do.	*Accused not traced.*

APPENDIX III—*concld.*

PROSECUTIONS UNDER THE INDIAN MINES ACT, 1901—*concld.*

Statement of prosecutions under the Indian Mines Act, 1901, during the year 1922—*concld.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number convicted.	Numbers of rules and sections of the Act contravened.	Remarks.
Central Provinces	Chhindwara	1	1	1	Section 20, Rule 1 of Notification No. 11793—103, dated the 30th December 1908, as amended by Notifications No. 5072—113, dated the 1st July 1916, and No. M-498, dated the 29th June 1922.	
	Do.	1	2	2	Do. do. do.	
	Do.	1	1	1	Section 20, Rule 8 of do. do.	
	Do.	1	1	1	Section 21, Special Rule 9	
	Jubbulpore	1	1	1	Section 20, Rule 1 of Notification No. 11793—103, dated the 30th December 1908, as amended by Notifications No. 5072—113, dated the 1st July 1916, and No. M.-498, dated the 29th June 1922.	
Delhi	Delhi	1	2	1	Do. do. do.	*One accused was acquitted.*
	Do.	1	1	...	Do. do. do.	*Accused died.*
Punjab	Shahpur	1	2	...	Do. do. do.	*Withdrawn.*

APPENDIX IV.

MISCELLANEOUS.

Statement No. 1.

List of Inspection Circles.

No. 1 Circle.	No. 2 Circle.
1. All mines in Baluchistan.	1. All mines in Assam.
2. All mines in Bihar and Orissa except mines in the district of the Sonthal Parganas and such mines in the district of Manbhum as lie west of a line drawn from mile 175 on the Bengal Nagpur Railway to mile 169 on the Grand Trunk Road and continued in a straight line across the district.	2. All mines in Bengal.
3. All mines in the North-West Frontier Province.	3. Such mines in Bihar and Orissa as lie in the district of the Sonthal Parganas and in the district of Manbhum east of a line drawn from mile 175 on the Bengal Nagpur Railway to mile 169 on the Grand Trunk Road and continued in a straight line across the district.
4. All mines in the Punjab.	4. All mines in Bombay.
5. All mines in Rajputana.	5. All mines in Burma.
	6. All mines in the Central Provinces.
	7. All mines in Madras.

Statement No. 2.

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1922.

(a) Certificates granted to holders of English certificates of competency.

FIRST CLASS.

NAME.	No. of Indian certificate.	Date of Indian certificate.	No. of English certificate.	Date of English certificate.
Manley, Frederick William .	280	18th April 1922 . .	746	22nd January 1920.
Minto, Oswald . . .	281	Ditto . .	753	Ditto.
Morgan, Arthur Mansel .	282	Ditto . .	861	10th February 1921.
Heslington, Thomas Parker .	283	4th May 1922 . .	733	22nd January 1920.
Jones, Clifford . . .	284	Ditto . .	973	11th May 1921.
Whyte, Maurice Melville .	285	Ditto . .	934	12th February 1921.
Fairfield, Wilfrid . .	286	12th December 1922 .	796	11th August 1920.
Flanningan, Peter . .	287	Ditto . .	893	12th February 1921.
Hale, Bertram John . .	288	Ditto . .	947	Ditto.
Healy, John . . .	289	Ditto . .	896	Ditto.
Mullin, George . . .	290	Ditto . .	421	27th July 1917.
Radford, Simeon . .	291	Ditto . .	4171	28th June 1912.
Roy, Alexander Rose . .	292	Ditto . .	613	27th January 1919.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 2—*contd.*

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1922—*contd.*

(*b*) Certificates of competency.

FIRST CLASS.

Name.	No. of certificate.	Date of certificate.	REMARKS.
Kolya, Narayan Chandra	138	4th May 1922.	
Rawal, Girijashankar Shambhuram	139	Ditto.	
Ganguly, Bijoy Kumar	140	Ditto.	
Allan, Herbert Durham	141	Ditto.	
Chatterjee, Hrishi Kesh	142	Ditto.	
Habberjam, James	143	Ditto.	
Wilson, Thomas	144	Ditto.	
Chatterjee, Kshetra Mohon	145	Ditto.	
Ghatak, Tara Sankar	146	Ditto.	
Banerjee, Jatindra Nath	147	Ditto.	
Pandya, Pranjivan Hargovind	148	Ditto.	
Ghani, Md. Osman	149	Ditto.	
Chakravarty, Profulla Ranjan	150	Ditto.	
Karmakar, Kali Pada	151	Ditto.	
Jackson, Clarence Oliver	152	Ditto.	
Mukerjee, Bhupendra Kumar	153	Ditto.	
Menezes, Vincent de	154	Ditto.	

(*a*) Certificates granted to holders of English certificates of competency.

SECOND CLASS.

NAME.	No. of Indian certificate.	Date of Indian certificate.	No. of English certificate.	Date of English certificate.
Gittings, Harry	25	12th December 1922.	7229	4th January 1910.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 2—*concld.*

Names of persons to whom first and second class certificates to manage a coal mine were granted during the year 1922—*concld.*

(*b*) Certificates of competency.

SECOND CLASS.

NAME.	No. of certificate.	Date of certificate.	REMARKS.
Walker, Clarence James	267	4th May 1922.	
Laker, Stanley Alfred George	268	Ditto.	
Biswas, Balaram	269	Ditto.	
Chatterji, Kali Pada	270	Ditto.	
Bose, Amulya Krishna	271	Ditto.	
Chatterji, Anileswar	272	Ditto.	
Shome, Makhan Lall	273	Ditto.	
Joseph, Marcus Reginald Coleman	274	Ditto.	
Basu, Rama Nath	275	Ditto.	
Mitra, Jnanendra Nath	276	Ditto.	
Roy Chowdhury, Himansu Kumar	277	Ditto.	
Paul, Upendra Nath	278	Ditto.	
Samanta, Debi Kinkar	279	Ditto.	
De, Probodh Chandra	280	Ditto.	
Mukherji, Sakti Pada	281	Ditto.	
Mukherjee, Tarapada	282	Ditto.	
Roy, Rajeswar	283	Ditto.	
Mukherjee, Kali Dass	284	Ditto.	
Bhattacharjee, Kshitish Chandra	285	Ditto.	
Chatterjee, Khirode Chandra	286	Ditto.	
Bhattacharji, Pusker Nath	287	Ditto.	
Chakravarty, Hari Pada	288	Ditto.	
Mukherji, Krishna Kinkar	289	Ditto.	
Banerji, Baidya Nath	290	Ditto.	
Sarkar, Pramatha Nath	291	Ditto.	
Hazra, Probhakar	292	Ditto.	
Das, Paresh Chandra	293	Ditto.	
Sen Gupta, Nripendra Chandra	294	Ditto.	
Sen Gupta, Mono Mohan	295	Ditto.	
Chowdhury, Debendra Nath	296	Ditto.	
Goswami, Jibananda	297	Ditto.	
Sinha, Modhusudan	298	Ditto.	
Sarkar, Radhika Ranjan	299	Ditto.	
Durgaprasad, Gotipati Ramaswamy	300	Ditto.	
Kundu, Shibpada	301	Ditto.	
Mondal, Phanindra Nath	302	Ditto.	
De, Abinash Chandra	303	Ditto.	
Mitchell, Christopher Robert Stanley	304	Ditto.	

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 3.

List of Universities and Colleges approved by the Governor-General in Council for the purposes of Rules 32 and 33 under the Indian Mines Act.

Name of Institution and Degree or Diploma.	Date.
University of Birmingham in respect of its Degree of B. Sc. in Mining and Diploma in Mining.	11th June, 1904.
University College of Bristol in respect of its Senior Diploma in Mining.	16th September, 1904.
University of Cambridge in respect of its Diploma in Mining Engineering.	6th June, 1905.
University of Durham in respect of its Degree of B. Sc. in Mining	21st December, 1903.
Durham College of Science in respect of its Diploma in Mining	29th June, 1904.
University of Glasgow in respect of its Degree and Diploma in Mining.	28th September, 1904.
Glasgow and West of Scotland Technical College in respect of its Diploma in Mining.	28th June, 1904.
University of Leeds in respect of its Degree of B. Sc. in Mining and Diploma in Mining.	21st November, 1904.
University of London in respect of its B. Sc. Degree in Mining for Internal Students, subject to the Degree being endorsed by the University with a certificate of four months' practical experience in a mine.	9th June, 1905.
University of London in respect of its B. Sc. Degree in Mining for External Students, subject to the Degree being endorsed by the University with a certificate of four months' practical experience in a mine.	7th August, 1906.
Royal School of Mines in respect of its Associateship in Mining .	24th March, 1904.
University of Oxford in respect of its Diploma B. for Colliery Engineers (in Scientific Engineering and Mining subjects).	11th February, 1905.
University College of Sheffield in respect of its Diploma in Mining	15th July, 1904.
University College of South Wales and Monmouthshire in respect of its Diploma in Mining.	19th April, 1904.
Wigan Mining and Technical College in respect of its Diploma in Mining.	26th August, 1904.
Bengal Engineering College, Sibpur, in respect of its Diploma in Mining.	22nd February, 1907.
Merchant Venturers' Technical College, Bristol, in respect of its Diploma in Mining Engineering.	5th October, 1905.
Victoria University of Manchester in respect of its Degree and Certificate of Mining.	14th February, 1906.
University College of Nottingham in respect of its Diploma in Mining Engineering.	28th March, 1906.
University of Sheffield in respect of its Degree of Bachelor of Engineering (Mining).	30th June, 1906.
Heriot-Watt College in respect of its certificate in Mining Engineering.	16th January, 1908.
Calcutta University in respect of its Degree of Bachelor of Engineering in the Branch of Mining Engineering.	24th September, 1910.
Harvard University, Cambridge, Massachusetts, in respect of its Diploma in Mining Engineering.	22nd February, 1913.
Columbia University, New York, in respect of its Degree of Engineer of Mines.	13th March, 1915.
California University, United States of America, in respect of its Degree of Mining Engineer.	19th February, 1916.
Pittsburg University, United States of America, in respect of its Degree of Engineer of Mines.	19th February, 1916.
Leland Standford Junior University, California, in respect of its Degree of Bachelor of Arts, in Geology and Mining.	10th August, 1918.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 4.

BENGAL ENGINEERING COLLEGE.

THE MINING CLASSES.

Admissions to the Mining Diploma Course at the Bengal Engineering College.

The Diploma Course covers two Sessions, commencing yearly in April, and lasting till the examinations in the following March. (There is a vacation of about three months in August, September and October.) Six weeks of each Session is spent during November and December at a camp of mine surveying in the colliery districts.

Three classes of students are admitted—

Occasional—who are admitted to receive training in connection with private business.

Regular—who need have no experience of mining.

Special—who have had about two years' previous experience of coal-mining (underground).

A total of 4 seats yearly are reserved for candidates domiciled in Bihar and Orissa and 1 seat each for a candidate domiciled in Assam and Mysore.

Admissions are made as follows :—

Regular and occasional students.—Age may not exceed 20 on January 1st of the year of admission.

A.—Through a special preparatory course of one year's duration at the Bengal Engineering College. Admissions at the beginning of March.

B.—Through the Sub-Overseer classes (a two years' course at Dacca, Burdwan, Rajshahi and Pabna in Bengal; Bankipur in Bihar and Orissa).

Special students—

C.—Direct from the mines to the Mining Diploma classes without passing through either A or B. Admissions at the beginning of April. Applications must be made by 1st March accompanied by certificates from the colliery managers under whom candidates have served, showing the period and nature of employment underground.

Admission qualifications to A, B and C—

The passing of the B. Final or the Matriculation Examination in the 1st Division with additional mathematics, the Junior Cambridge Examination held at the end of the supplementary course for elementary European Schools, or equivalent.

The number that can be admitted is limited. The selection of candidates rests with the Principal who, all other things being equal, will prefer the younger of two candidates. So many superior candidates apply for admission that selection is now practically confined to those who have completed the I. Sc. S. or Senior Cambridge Course of Study.

Scholarships awarded by the Bengal Government—

For Regular students—

Scholarships of the following number and value are available for regular students admitted under A; these are awarded on the result of the examination held at the end of the Preparatory Course A :—

Two of Rs. 12 monthly.
Three of Rs. 6 monthly.

Stipends awarded by the Bihar and Orissa Government—

Two Boarding stipends of Rs. 15 monthly tenable for three years by poor and capable students of that Province. These are available in either the Mining or Mechanical and Electrical Engineering classes.

For Special students—Awarded by Bengal Government.

Awarded on the result of the examination held at the end of the lectures given in the colliery districts by the Instructor in Mining.

One of Rs. 50 for Europeans.
One or two of Rs. 25 for Indians.

These amounts should be sufficient to maintain a special student resident at the College. For further particulars apply for the Mining Classes Circular.

T. H. RICHARDSON,
Principal, Bengal Engineering College,
Botanic Garden P. O.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 5.

MINING INSTRUCTION IN BENGAL.

[*The Mining Education Advisory Board desire that Colliery Managers will kindly publish this information in their collieries. An appeal is also made to them to support the lectures by seeing that members of their colliery staff, who are suitable, take advantage of the lectures and attend them regularly.*]

The full course comprises two parts, the lectures in which are delivered in alternate years as follows :—

(1) The principles of Coal Mining, 1922-23.

(2) The principles of Mechanical Engineering of Coal Mines, 1923-24.

A fee of Rs. 5 (five rupees) payable to the Mining Instructor on the first registration of his name is charged to each student for each year's series of lectures. This fee is non-returnable.

Programme for Session, 1922-23.

Lectures on the principles of Coal Mining will be delivered in English, as follows :—

RANIGANJ COAL-FIELD.

Dishergarh . . .	Lecture-room near Club . .	Wednesdays	5-30 P.M.
Raniganj . . .	Bengal Coal Co. Ltd., zamindary office	Thursdays	5-0 ,,
Jamuria . . .	Chief Mining Engineer's office, Sibpur Colliery . . .	Fridays	5-30 ,,

The course of instruction, consisting of not less than 30 lectures, will commence in the first week in September and end in the following April. The examination will be held early in May. Candidates who pass the examination will receive a certificate recording their success. No candidate will, however, be permitted to sit for the examination unless he has attended 50 per cent. of the lectures and received 40 per cent. of the marks allotted for home work.

Scholarships are awarded by the Mining Education Advisory Board on the results of the examination; these will be tenable for two years at the Sibpur College, and are granted to enable the holders to attend the full course for the Diploma in the Principles of Mining. One scholarship of Rs. 50 is reserved for Europeans and two of Rs. 25 are awarded to Indians. Candidates are not eligible for scholarships unless they have two full years of practical training in the collieries. Preference will be given to those who have satisfied the examiners in both of the lecture courses in the coal-fields.

The following Local Committees have been appointed :—

RANIGANJ COAL-FIELD.

Dishergarh Centre.

Mr. J. H. Lang, Chairman.
,, J. B. Wardlaw (Dishergarh).
,, Geo. Miller (Sitarampur).
,, W. Weir (Kulti).
Babu U. N. Mandal (Dishergarh).
,, K. B. Chandra (Mugma).
,, S. N. Ghosh (Barakar).

Jamuria Centre.

Mr. J. H. Lang, Chairman.
,, P. S. Keelan (Charanpur).
,, G. S. Castles (Charanpur).
,, D. N. Archibald (Sripur).
,, W. S. Elphinstone (Asansol).
Babu S. N. Banerjee (Faridpur Colliery, Charanpur P.O.)

Raniganj Centre.

Mr. J. H. Lang, Chairman.
,, P. S. Keelan (Charanpur).
,, A. T. Creet (Kalipahari).
,, W. J. Rees (Raniganj).
Babu Promotho Nath Hazra (Toposi).
,, Purna Chandra Bagchi (Kalipahari).
,, S. Chaudhuri (Jamehari, Raniganj).

T. H. RICHARDSON,

Secretary, Mining Education Advisory Board,

B. E. College, Botanic Garden P. O.,

Howrah.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 5—*contd.*

MINING INSTRUCTION IN THE COAL-FIELDS OF BENGAL.

SYLLABUS OF THE COURSE OF INSTRUCTION.

The lectures in the following courses are delivered in alternate years :—

THE PRINCIPLES OF COAL MINING.

1. *Geology.*—General structure of the earth's crust; igneous and aqueous rocks; definitions of outcrop, dip, strike, fault, roll, wash-out and dyke, etc.; recording geological observations; reading a geological map; description of the Indian coal-bearing rocks; composition and properties of coal. Commercial values of coal.

2. *Exploration.*—Prospecting, trial shafts and trenching; advantages of boring; methods of boring; driving through faults, uses of boreholes in mines, etc.

3. *Breaking ground.*—Common tools; storage and use of explosives; electric fuses; machine drills; coal-cutting machines.

4. *Sinking.*—Site of colliery; position of inclines and shafts, their excavation and shape, apparatus used in sinking; lining shafts; arrangements at top of sinking shaft; brief mention of special methods of sinking.

5. *Methods of working.*—Quarrying, advantages of bench work, disposal of soil; shaft pillars; pillar and gallery method, working thick seams in stages, extraction of pillars, panels; brief description of long wall and chambering methods.

6. *Supporting.*—Props and lids, bars, chocks or cogs, square sets, special timbering in loose ground; arching; steel girders; packing; dry and hydraulic stowing.

7. *Mine gases.*—Their experimental preparation by chemicals, and illustration of their physical and physiological properties; their chemical composition; methods of detecting explosions; spontaneous combustion of coal; dangers of coal-dust.

8. *Ventilation.*—Ascensional currents, currents induced by the heat of steam or furnace; mine fans; friction of air in mines; theory of splitting the air; calculations of ventilating pressure, etc.; coursing the air; measurement of quantity of air; use of anemometer, water-gauge, thermometer and barometer, reversing the air current.

9. *Safety lamps.*—Principle of the safety lamps; Sir Humphrey Davys' experimental types of safety lamps; firedamp detectors.

THE PRINCIPLES OF MECHANICAL ENGINEERING OF COAL MINES.

1. *Applied Mechanics.*—Mensuration; definitions of motion, force, friction, work and energy; the simple machines; mechanical and electrical units; hydrostatics; the siphon; pressure of gases; Boyle's law.

2. *Steam, Electricity and Compressed air.*—Theory of steam boilers and their fittings; the steam engine; the dynamo; the electric motor; the air compressor.

3. *Winding.*—Types of winding engines and description of parts; calculation of the dimensions of winding engines; strength of ropes and chains; detaching hooks; over-winding prevention devices; rope cappings; care and examination of ropes, buckets, cages, guide ropes.

4. *Pumping.*—The lift pump; the force pump; sinking pumps; pumps with positive valve motion; the pulsometer; turbine pumps; calculations of the dimensions of pumps; methods of supporting pumps and pipes; strength of pipes, pipe joints; dams to hold back water.

5. *Hauling.*—Tramways; tubs; hand tramming; horse haulage; self-acting inclines; locomotives; single rope haulage; main and tail rope haulage; endless rope or chain haulage; calculations of the dimensions of hauling engines, ropes, etc.; capping of haulage ropes; couplings, haulage clips, etc.; signalling.

6. *Surface arrangements.*—Headframes and pulleys; receiving frames; keps; arrangements of roads on pit bank; tipplers; simple screening and sizing; railway sidings; aerial ropeways.

7. Simple treatment of coking and bye-product ovens.

Adopted by the Mining Education Advisory Board at their meeting of 27th January 1917. Copies of this Circular may be obtained from the Secretary or from the Instructor.

T. H. RICHARDSON,
Secretary.

BENGAL ENGINEERING COLLEGE,
BOTANIC GARDEN P. O.
The 16th October 1922.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 6.

MINING INSTRUCTION IN BIHAR AND ORISSA.

(The Mining Education Advisory Board desire that Colliery Managers will kindly publish this information in their collieries. An appeal is also made to them to support the lectures by seeing that members of their colliery staff, who are suitable, take advantage of the lectures and attend them regularly.)

The full course covers a period of three years and the following is an abstract of the syllabus.

First year.—(1) Mathematics, (2) Elementary Science.

Second year.—(1) Elementary Mechanics, (2) Mechanical Drawing.

Third year—(1) Elementary Mining Surveying. (2) The Principles of Coal Mining. (3) Mechanical and Electrical Engineering of Collieries.

Copies of the detailed syllabus may be obtained from the Secretary, the Chairman of the Local Committees and Lecturer.

A fee of Rs. 5 (five rupees) is payable by each student to the Mining Lecturer on the first registration of his name for the first or the second year's course of lectures. The fee for the third year's course is Rs. 10. These fees are not returnable.

Programme for Session, 1922-23.

During Session 1922-23 instruction in all the years of the course will be provided. There will be two lectures per week in the first and the second years and three lectures per week in the third year.

Lecturer.

Mr. Griffith Jones, B.Sc., first class certificated Colliery Manager and Surveyor.

Assistant Lecturer.

N. N. Sen, L.M.E.

All students should enrol a follows:—

Jharia Lecture Hall	Monday, September 4, at 5-30 P.M.
Sijua Lecture Hall	Tuesday, September 5, at 5-30 P.M.

The class arrangements for all the courses will be arranged by the lecturer on the enrolling nights. Students should enrol at the first meeting so that the class work may be commenced without delay.

The course of instruction will commence in the first week in September and end in the following May. The examination will be held in May. Candidates who pass the final examination will receive a certificate recording their success. No certificate shall be given to candidates unless they attend the 2nd and 3rd years. No candidate will, however, be permitted to sit for the examination unless he has attended 50 per cent. of the lectures and received 40 per cent. of the marks allotted for home work.

The following Local Committees have been appointed:—

JHARIA COALFIELD.

Jharia Centre.	Sijua Centre.
Mr. D. Penman, Chairman.	Mr. D. Penman, Chairman.
,, G. Jones, Lecturer.	,, G. Jones, Lecturer.
,, R. G. M. Bathgate (Jamadoba).	,, A. A. Agabeg (Sijua).
,, J. Murray (Kustore).	,, R. Heron (Bhalgora, Jharia P.O.).
,, J. B. Argyle (Lodna).	,, H. M. Bull (Bansjora).
,, R. Barrowman (Standard Coal Company, Jharia).	,, G. C. Leach (Sijua P. O.)
,, Narendra Nath Sarkar (South Kujama, Jharia).	Babu Trikumdas Doyal (Bullihari Colliery, Kusunda P.O.)
,, S. M. Chatterjee (Kalithan Suratand, Jharia).	Mr. Meghji Bhimji Relia (Angrapattra).

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 6—*contd.*

MINING INSTRUCTION IN THE COALFIELDS OF BIHAR AND ORISSA.

SYLLABUS OF THE COURSE OF INSTRUCTION.

First Year Course.

1. *Mathematics.*—Arithmetic and Algebra up to simple equations. Mensuration and use of squared paper. Trigonometry—up to solution of Triangles.

2. *Elementary Science—Physics.*—Volume of displacement, Balances, Density, Specific gravity bottle, Fluid pressure, Hydrometer, Syphon, Barometer, Ideas of forces, Equilibrium of three forces, Centres of gravity, Fraction, Thermometer, Expansion due to heat, Latent heat of steam, Properties of solids, Liquids and gases, Boyle's Law, Hydrostatics, Elements of electricity and Magnetism, Electrical units.

Chemistry.—Atomic Theory, Elements, Compounds, mixtures, acids, bases, composition of the atmosphere and of gases met with in Mines.

Second Year Course.

1. *Mechanics.*—Units of Mass, Length and time, Levers, Pulleys, Wedges, Gearing, Simple Machines, Equilibrium, Units of work and energy, Horse Power, Stress and Strain, Design and headgears, Strength of ropes, chains, boilers, etc. The elementary principles of hydraulics.

2. *Mechanical Drawing.*—Conventional signs, Construction of Scales, Nuts, Bolts, Screw threads, Simple parts of machines, Engines and Pumps. The elementary principles of geometry.

Third Year Course.

1. *Mining Surveying.*—Use of pens, Scales and protectors, Surveying by means of the chain only. The Miners dial, Loose needle surveying, Fixed needle surveying, Levelling, Field books, Contouring. The use of the Plane Table. The Theodolite and its uses, Plotting by co-ordinates. Setting out and alignment. The adjustment of instruments.

2. *The Principles of Coal Mining*—(1) *Geology.*—General structure of the earth's crust, igneous and aqueous rocks; definitions of outcrop, dip, strike, fault, roll, wash-out and dyke, etc., recording geological observations reading a geological map, description of the Indian coal-bearing rocks, composition and properties of coal, commercial values of coal.

(2) *Exploration.*—Prospecting, trial shafts and trenching, advantages of boring, methods of boring, driving through faults, uses of boreholes in mines, etc.

(3) *Breaking ground.*—Common tools, storage and use of explosives, electric fuses, machine drills, coal-cutting machines.

(4) *Sinking.*—Site of colliery, position of inclines and shafts, their excavation and shapes, apparatus used in sinking, lining shafts, arrangements at top of sinking shaft, brief mention of special methods of sinking.

(5) *Methods of working.*—Quarrying, advantages of bench work, disposal of soil, shaft pillars, pillar and gallery method, working thick seams in stages, extraction of pillars, panel, brief description of long wall and chambering methods.

(6) *Supporting.*—Props and lids, bars, chocks or cogs, square sets, special timbering in loose ground, arching, steel girders, packing, dry and hydraulic stowing.

(7) *Mine gases.*—Their experimental preparation by chemicals and illustration of their physical and physiological properties, their chemical composition, methods of detecting, explosions, spontaneous combustion of coal, dangers of coal-dust.

(8) *Ventilation.*—Ascensional currents, currents induced by the heat of steam or furnace, mine fans, friction of air in mines, theory of splitting the air, calculations of ventilating pressure, etc., coursing the air measurement of quantity of air, use of anemometer, water-gauge, thermometer and barometer, reserving the air current.

(9) *Safety lamps.*—Principle of the safety lamps, Sir Humphrey Davys' experimental types of safety lamps, firedamp detectors.

3. *The Principles of Mechanical and Electrical Engineering of Coal Mines*—(1) *Applied Mechanics.*—The practical application of the principles taught in the 1st and 2nd years.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 6—*concld.*

(2) *Steam, electricity and compressed air.*—Theory of steam boilers and their fittings, the steam engine, the dynamo, the electric motor, electric lighting and wiring, the air compressor.

(3) *Winding.*—Types of winding engines and description of parts, calculation of the dimensions of winding engines, strength of ropes and chains, detaching hooks, over-winding prevention devices, rope cappings, care and examination of ropes, buckets, cages, guide ropes.

(4) *Pumping.*—The lift pump, the force pump, sinking pumps, pumps with positive valve motion, the pulsometer, turbine pumps, calculations of the dimensions of pumps, methods of supporting pumps and pipes, strength of pipes, pipe joints, dams to hold back water.

(5) *Hauling.*—Tramways, tubs, hand tramming, horse haulage, self-acting inclines, locomotives, single rope haulage, main and tail rope haulage, endless rope or chain haulage, calculations of the dimensions of hauling engines, ropes, etc., capping of haulage ropes, couplings, haulage clips, etc., signalling.

(6) *Surface arrangements.*—Headframes and pulleys, receiving frames, keps, arrangements of roads on pit bank, tipplers, simple screening and sizing, railway sidings, aerial ropeways.

(7) Simple treatment of coking and bye-product ovens.

DEPARTMENT OF MINES, DHANBAD:
The 1st August, 1922.

D. PENMAN,
Assistant Secretary,
Mining Education Advisory Board.

Statement No. 7.

DEPARTMENT OF MINES IN INDIA.

Regulations made by the Board of Examiners under Rule 30 of the rules applying to coal-mines made under Section 20 of the Indian Mines Act, 1901, for the conduct of examinations for Colliery Managers' Certificates of competency.

(1) No member of the Board of Examiners shall act as a local examiner, except in emergent cases.

(2) When possible one or more members of the Board of Examiners shall attend every examination on at least one of the days.

(3) So far as is practicable, the local examiners for each examination shall be:—

(*a*) An Inspector of Mines, who shall be Secretary to the local examiners.

(*b*) Two Mining Engineers or Colliery Managers who must be the holders of first class certificates. Provided that a Mining Professor may be appointed instead of one of the Mining Engineers or Managers.

(4) The remuneration of each local non-official examiner shall be Rs. 150 for each examination, and a capitation fee of Rs. 2 for each first class candidate and Re. 1 for each second class candidate examined, and travelling expenses and halting allowances on the first class scale under the Civil Service Regulations; but an Inspector of Mines, acting as a local examiner, shall not be entitled to any fee or remuneration whatsoever, beyond the travelling expenses and halting allowances due to him in his official capacity.

(5) The examinations will be advertised at least four months before the dates of the examinations, and applications, which must be on the prescribed form and supported by original certificates as to experience and character, and accompanied by fees, will be received up to a date, duly advertised, not less than one month prior to the examinations. No application which is not in the prescribed form, or which is not supported by the certificates and fees referred to above, or which is not submitted in due time, will be considered by the Board.

(6) The subjects for examination shall be:—

(*a*) *Geology and Mining.*—The geological features of the Coalfields of India, and the application of geology to coal mining. Boring, Sinking. Methods of laying out and working. Supporting roof and sides. The use of explosives. Dams.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 7—*contd.*

(*b*) *Ventilation, Explosions, Underground fires and inundations.*—Natural ventilation. Fans and other means of ventilation. The distribution, measurement and control of air in mines. Mine gases. The construction, use and testing of safety lamps. Spontaneous heating. Coal dust. Recovery of mines after explosions, fires and inundations.

(*c*) *Machinery.*—Strength of materials. Steam. Compressed air. Electricity. Winding. Hauling. Pumping. Transmission of power. Mechanical coal-cutting and drilling.

(*d*) *Surveying, Levelling and Mensuration.*—Magnetic declination. Loose and fast needle surveying. The theodolite. Contour lines and levelling. Calculations and triangulation. Connecting of surface and underground surveys. Mine plans. Instruments.

(*e*) *Management and Mining Legislation.*—Organization. Indian Mines Act and Rules under the Act. Other legislation applicable to mines. Sanitation.

(7) The examination shall be both written and oral and the subjects and conditions shall be the same for candidates for both classes of certificates ; but the examination questions shall be made suitable for each class of certificate.

The examiners shall have power to eliminate the oral examination in the case of candidates who do not reach a standard in the written examination to be prescribed by the Board of Examiners.

(8) The following shall be the maximum number of marks given for each subject :—

Subject.	First Class.			Second Class.		
	Papers.	*Viva voce.*	Total.	Papers.	*Viva voce.*	Total.
1	2	3	4	5	6	7
Geology and Mining	110	30	140	100	40	140
Ventilation, Explosions, Underground fires and inundations.	75	25	100	70	30	100
Machinery	90	30	120	80	40	120
Surveying, Levelling and Mensuration	50	10	60	45	15	60
Management and Mining Legislation	60	20	80	50	30	80
Total	385	115	500	345	155	500

(9) A candidate for a certificate of competency must qualify in each of the subjects for examination, and must obtain 40 per cent. of the maximum marks obtainable for each paper, 40 per cent. of the maximum marks for the oral examination and 60 per cent. on the whole examination (written and oral) to qualify.

(10) A candidate for a first class certificate, who does not reach the necessary standard, may, nevertheless, at the discretion of the local examiners, be recommended to the Board of Examiners for a second class certificate, if, in their opinion, he has done sufficiently well to deserve it.

(11) The Secretary to the local examiners shall submit a report of the result of the examination giving the number of marks obtained by each candidate in each subject, to the President of the Board of Examiners within one month of the close of the examination.

(12) The questions to be set at the examinations shall be prepared by the Board of Examiners which may, at its discretion, confer with the local examiners.

(13) At least one examination for first class candidates and at least one examination for second class candidates shall be held annually in one of the Bengal or Bihar and Orissa coalfields ; and in other parts of India examinations will be held whenever, in the opinion of the Board of Examiners, the number of candidates in a coal mining centre justifies the holding of an examination.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement No. 7—*concld.*

(14) No candidate will be allowed to take part in the examination until he has produced an authorization from the Board of Examiners.

(15) Every candidate must sign a register, in which he will be given a definite number. He must sign his name and write his registered number at the top of every page of the paper on which he writes the answers to the questions.

(16) The number of the question must be given in bold figures before the answer to each question.

(17) The calculations and work by which a result is obtained must be clearly shown in immediate connection with the answer to each question.

(18) Answers must be strictly confined to the questions asked.

(19) Sketches may be made to make answers clear.

(20) When sketches are asked for, it should be understood that, unless otherwise stated, freehand sketches, with dimensions, are all that is necessary, and candidates should not spend time in making finished drawings.

(21) Any candidate speaking to any other candidate during the examination, or using any book, notes or private paper, or acting in any manner which the examiners consider improper will be liable to be disqualified at their discretion. The Board of Examiners may in such a case use their discretion as to allowing the candidate to sit at any future examination.

(22) When a candidate has completed the answers to the questions, or when the time allowed for answering the questions has elapsed, or he has been disqualified, he must hand the paper of questions and his answers to the examiners, and at once leave the examination room.

(23) A time-table will be supplied to each candidate at the commencement of the first day's examination.

(24) The oral examination will be held at a subsequent date. Only those candidates who obtain a certain degree of proficiency in the written examination will be examined orally. Due notice of time and place will be sent to each candidate required by the examiners for oral examination.

(25) The number of marks given for each question will be shown in brackets at the end of the question.

(26) Ink and paper will be provided, and no paper other than the official paper provided may be used. Candidates must bring their own pens and pencils, drawing pens and drawing instruments, including a protractor.

These regulations cancel all previous regulations and shall take effect from the 1st January 1923.

R. R. SIMPSON,

Chief Inspector of Mines in India

and ex-officio President of the Board of Examiners.

DHANBAD,

The 10th June, 1922.

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement No. 8.

DEPARTMENT OF INDUSTRIES.

NOTIFICATION.

Simla, the 29th June, 1922.

No. M.-498.—In exercise of the powers conferred by section 20 of the Indian Mines Act, 1901 (VIII of 1901), the Governor General in Council is pleased to make the following amendments in the rules published with the notification of the Government of India in the Department of Commerce and Industry, No. 11793-103, dated the 30th December 1908.

1. For rule 1 of the said rules the following shall be substituted, namely :—

"(1) On or before the tenth day of every month, the owner, agent or manager of every coal mine shall send to the Chief Inspector of Mines a correct return for the preceding calendar month in Form I in the Schedule to these rules.

(2) The owner, agent or manager of every mine shall submit annual returns in Forms II, III, IV and V as prescribed in the Schedule to these rules. In addition to these returns, the owner, agent or manager shall submit returns, in the case of a coal mine in Forms VI, VII and VIII, in the case of a mica mine in Forms IX and X, and in the case of any other mine in Forms VI, IX and XI in the Schedule to these rules.

(3) The returns prescribed by sub-rule (2) shall be made out in duplicate and before the twenty-first day of January in the year following that to which they refer the owner, agent or manager shall forward one copy to the Chief Inspector of Mines and the other to the District Magistrate.

(4) If the owner of any mine abandons the mine or discontinues the working of the mine for more than three months or if a change of ownership occurs, the returns required by sub-rule (2) shall be submitted by the owner or the former owner, as the case may be, within one month from the date of abandonment or change of ownership or within three months from the date of discontinuance :

Provided that by order in writing the Chief Inspector of Mines may extend the period for the submission of such returns up to any date not later than the twenty-first day of January in the year following that to which they refer.

Provided further that nothing in this sub-rule shall be interpreted as authorising the submission of any return later than the twenty-first day of January in the year following that to which it refers."

2. In rule 8 of the said rules, for the words and figures "Form VII in the Schedule hereto annexed" the words and figures "Form XII in the Schedule to these rules" shall be substituted, and after the word "explosion" the words "or ignition" shall be inserted.

3. For the Schedule to the said rules, the following shall be substituted, namely :—

THE SCHEDULE.

FORM I.

(FOR COAL MINES ONLY.)

Monthly return of coal raisings and coal despatches for the month 19 .

1. Name of mine———

2. Name of owner———

3. Postal address of owner———

4. Raisings of coal of all kinds (including colliery consumption and coal used for coke making). Tons———

5. Despatches of coal. Tons———

6. Signature of owner, agent or manager———

Dated———

[NOTE.—*Under Section 22 (2) (b) of the Indian Mines Act, failure to forward a correct return to the Chief Inspector of Mines by the prescribed date will render the agent, owner or manager liable, on conviction, to a penalty which may extend to Rs. 500.*]

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement No. 8—*contd.*

FORM II.

(FOR ALL MINES.)

Annual return for the year ending on the 31st December 19 .

1. Name of mine———

2. Postal address of mine———

3. Date of opening———

4. Date of closing (if closed)———

5. Situation of mine { District———
   Province———

6. { Name of owner———
   Postal address of owner———

7. { Name of Managing Agents (if any)———
   Postal address of Managing Agents (if any)———

8. { Name of Agent (if any), as defined in Section 3 (*a*) of the Indian Mines Act
   ———
   Postal address of Agent———

9. { Name of Manager———
   Postal address of Manager———

10. Name of mineral worked———

11. Means by which the mineral is raised from the mine, *i.e.*, hand labour, mechanical or electrical power———

[NOTE.—*Under Section 22 (2) (l) of the Indian Mines Act, failure to forward a correct return to the Chief Inspector of Mines by the prescribed date will render the agent, owner or manager liable, on conviction, to a penalty which may extend to Rs. 500.*]

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement No. 8—*contd.*

FORM III.

(FOR ALL MINES.)

Persons employed during the year ending on the 31st December 192 .

Class of labour.	Aggregate number of daily attendance during the year of persons permanently and temporarily employed.	Number of days worked.	DAILY AVERAGE NUMBER OF PERSONS EMPLOYED AS CALCULATED BY DIVIDING THE AGGREGATE NUMBER OF ATTENDANCES BY THE NUMBER OF DAYS WORKED.								Gross total obtained by adding totals in columns 7 and 11. This should equal the number obtained by dividing the number in column 2 by the number in column 3.
			In the workings of the mine.				On surface and not in the workings of the mine, including all subordinate officials and persons employed on sidings, loading wharves, private railways and surface tramways and also in carting.				
			Males over 12 years of age.	Females over 12 years of age.	Children under 12 years of age.	TOTAL.	Males over 12 years of age.	Females over 12 years of age.	Children under 12 years of age.	TOTAL.	
1	2	3	4	5	6	7	8	9	10	11	12
Miners											
* Other persons employed											
TOTAL .											

* Excluding the superior supervising staff.

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement No. 8—*contd.*

FORM III—*contd.*

Hours and Wages.			
Class of labour.		Average number of hours worked per week per person.	Average weekly earnings per person.
Miners			
Other persons employed underground	Males		
	Females		
Other persons employed on surface	Males		
	Females		

Note.—Where wages are paid monthly, it is permissible to enter figures for the month, but the fact that they are such should be clearly stated.

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement No. 8—*contd.*

FORM IV.

(FOR ALL MINES.)

Accidents and Prosecutions.

NUMBER OF SEPARATE ACCIDENTS* REPORTED DURING THE YEAR.			NUMBER OF PERSONS.		Number of prosecutions instituted by the management, with the sections and rules under which the prosecutions were instituted.	Number of persons convicted, with the sections and rules under which the convictions were obtained.
Fatal.	Serious.	TOTAL.	Killed.	Seriously injured.		
1	2	3	4	5	6	7

* Accidents, which were reported as serious accidents but resulted fatally, should be entered as fatal accidents.

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*contd.*

FORM V.

(FOR ALL MINES.)

Epidemic Diseases.

Name of disease.*	Date of appearance.	Date of disappearance.	Number of cases.	Number of deaths.
Cholera				
Plague				
Small-pox				
Influenza				

* Figures for any other specified disease which has been epidemic at the mine should be entered in this form.

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*contd.*

FORM VI.

(FOR ALL MINES EXCEPT MICA MINES.)

Type and aggregate horse-power of electrical apparatus.

1.—System of supply (whether continuous current or alternating current)—	
Voltage of supply	
Periodicity	
Source of supply	
2.—Voltage at which current is used for—	
Lighting	
Power	
3.—Aggregate horse-power of motors installed on surface for—	
Winding	
Ventilation	
Haulage	
Coal washing or screening	
* Ore dressing	
Miscellaneous	
Total horse-power	
4.—Aggregate horse-power of motors installed below ground for—	
Haulage	
Pumping	
Portable machinery	
Miscellaneous	
Total horse-power	
5—Total horse-power (addition of 3 and 4)	

* In the case of a mine, other than a coal mine.

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*contd.*

FORM VII.

(FOR COAL MINES ONLY.)

Explosives, safety lamps, mechanical ventilators, and coal-cutting machines.

EXPLOSIVES.			SAFETY LAMPS.				MECHANICAL VENTILATORS.			COAL-CUTTING MACHINES.			
Name of explosive.	Quantity used in lb.	Number of detonators used.	Name of safety lamps.	No. of safety lamps and method of locking.			Name of mechanical ventilator.	Average total quantity of air produced per minute.	Water gauge obtained.	Name and type.	Power used, i.e., electricity or compressed air.	Number in use.	Total No. of square feet cut.
				Screw.	Lead rivet.	Magnetic.							

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*contd.*

FORM VIII.

(FOR COAL MINES ONLY.)

Output for year ending on the 31st December 19 .

—	Opening stocks on 1st January 19 .	Raisings (including colliery consumption and coal used for coke making).	Total of columns 2 and 3.	Total value of raisings ("Value" means, and should be calculated upon actual or estimated selling price into wagons at the mine).	Despatches.	Colliery consumption (exclusive of coal used for coke making).	Coal delivered for coking on colliery.	Closing stocks on 31st December 19 .	Total of columns 6, 7, 8 and 9.
	2	3	4	5	6	7	8	9	10
	Tons.	Tons.	Tons.	Rs.	Tons.	Tons.	Tons.	Tons.	Tons.
Coal, including rubble, slack and dust.									

Coal despatched to coke factories . . . . Tons.

NOTE.—The total in column 4 must be the same as the total in column 10.

The figures should be in tons and rupees, omitting cwt. and annas.

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*contd.*

FORM VIII—*contd.*

	Opening stocks.	Coke made.	Total of columns 1 and 2.	Coke despatched.	Closing stocks.	Total of columns 4 and 5.	Total value of coke made. ("Value" means, and should be calculated upon, actual or estimated selling price into wagons at the mine.)
	1	2	3	4	5	6	7
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Rs.

NOTE.—The total in column 3 must be the same as the total in column 6.
The figures should be in tons and rupees omitting cwt. and annas.

Signature of Owner, Agent or Manager———————————
(If the form is signed by the Managing Agents, the word "for owner" should be added.

Date of signature———————————

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*contd.*

FORM IX.

(FOR ALL MINES EXCEPT COAL MINES.)

Particulars of Explosives.

EXPLOSIVES.		
Name of explosives.	Quantity used in lb	Number of detonators used.

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*contd.*

FORM X.

(FOR MICA MINES ONLY.)

Output for year ending on the 31st December 19 .

Total amount of dressed Mica raised.	Total amount of dressed mica consigned.	Total value at the mine of mica consigned. ("Value" means, and should be calculated upon, actual or estimated selling price at the mine. Any charges incurred in transporting the mica outside the mine should not be included.)
1	2	3
Cwt.	Cwt.	
Lb.	Lb.	

Signature of Owner, Agent or Manager———————————
(If the form is signed by Managing Agents, the words "for owners" should be added.)

Date of signature———————————

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*contd.*

FORM XI.

(FOR ALL MINES EXCEPT COAL AND MICA MINES.)

Output for year ending on the 31st December 19 .

Name of mineral raised, and metal (if any) extracted.	Total amount of mineral raised. The figures should be stated :— (*a*) in the case of gem-stones in carats ; (*b*) in the case of alum, amber, asbestos, graphite, jadestone, steatite, tin-ore, tungsten-ore, in cwt., or where the circumstances require greater particularisation in order to give an accurate estimate of small outputs, in cwt. and lb. Output of radio-active minerals and rare minerals such as molybdenite, monazite, pitchblende, samarskite, tantalite, triplite, should be returned in cwt. and lb ; (*c*) in the case of clay, limestone, magnesite, marble, phosphatic-rock, salt, slate and other stone, and all metalliferous ores except those referred to in (*b*), in tons.	Total value at the mine of mineral raised. ("Value" means, and should be calculated upon, actual or estimated selling price at the mine. Any charges incurred in transporting the mineral outside the mine property should not be included.)	Quantity of metal or metals extracted at the mine. Each metal should be shown separately :— (*a*) in the case of gold, silver and other precious metals in Troy ounces ; (*b*) in the case of tin, in cwt., and fractions of cwt. ; (*c*) in the case of other metals in tons and fractions of tons.	Value of metal or metals extracted at the mine. The value of each metal should be shown separately.
1	2	3	4	5
TOTAL				

Signature of Owner, Agent or Manager———————————

(If the form is signed by Managing Agents, the words "for owners" should be added.)

Date of signature———————————

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*contd.*

FORM XII.

(FOR ALL MINES.)

Notice of Accident.

From—

To—The Chief Inspector of Mines, through the $\frac{\text{District}}{\text{Sub-divisional}}$ Magistrate of

Dated 19 .

SIR,

I have the honour to furnish the following particulars of a $\frac{\text{fatal}}{\text{serious}}$ accident / an accidental explosion or ignition which has occurred at the Mine :—

1. Situation of the mine. (Village, Station, District, Province.)	
2. Mineral worked	
3. Name and postal address of owner . .	

4. Name and sex of persons—			
Killed.	Injured.	Age.	Occupation.

5. Date and hour of accident	
6. Place of accident	
7. Cause and description	
8. Classification of accident *	
9. Nature of injury, and if fatal cause of death .	

I have the honour to be,

SIR,

Your most obedient servant,

Owner.

Agent.

Manager.

* Under one or other of the following heads, namely :—

(1) Explosions and ignitions of fire damp ; (2) falls of roof ; (3) falls of side ; (4) in shafts (overwinding) ; (5) in shafts (ropes and chains breaking) ; (6) in shafts (while ascending or descending by machinery) ; (7) in shafts (falling into the shafts from the surface) ; (8) in shafts (falling from part of the way down) ; (9) in shafts (things falling from the surface) ; (10) in shafts (things falling from part of the way down) ; (11) in shafts (miscellaneous) ; (12) suffocation by gases ; (13) by explosives ; (14) irruptions of water ; (15) haulage ; (16) by underground machinery ; (17) sundries underground ; (18) by surface machinery ; (19) surface boilers or pipes bursting ; (20) on surface railways or tramways belonging to the mine ; (21) by electricity ; (22) miscellaneous on surface.

A. C. CHATTERJEE,

Secretary to the Government of India.

APPENDIX IV—*contd.*

Miscellaneous—*contd.*

Statement no. 8—*concld.*

A copy is forwarded to all Local Governments and Administrations for information.

A copy is also forwarded to the Chief Inspector of Mines in India / Railway Department / Commissioner, Northern India Salt Revenue, / Secretary, Indian Mining Association / Secretary, Indian Mining Federation for information.

By order, etc.,

H. L. CHIBBER,

Assistant Secretary to the Government of India.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement no. 9.

INDIAN MINES ACT, 1923

(Act No. IV of 1923).

WHEREAS it is expedient to amend and consolidate the law relating to the regulation and inspection of mines; It is hereby enacted as follows :—

CHAPTER I.

Preliminary.

Short title, extent and commencement.

1. (*1*) This Act may be called the Indian Mines Act, 1923.

(*2*) It extends to the whole of British India, including British Baluchistan and the Sonthal Parganas.

(*3*) It shall come into force on the first day of July, 1924.

2. Nothing in this Act shall be construed to affect the provisions of the Upper Burma Ruby Regulation, 1887. XII of 1887.

Saving of Reg. XII of 1887.

Definitions.

3. In this Act, unless there is anything repugnant in the subject or context,—

(*a*) "agent," when used in relation to a mine, means any person appointed or acting as the representative of the owner in respect of the management of the mine or of any part thereof, and as such superior to a manager under this Act;

(*b*) "Chief Inspector" means the Chief Inspector of Mines appointed under this Act;

(*c*) "child" means a person under the age of thirteen years;

(*d*) a person is said to be "employed" in a mine who works under appointment by or with the knowledge of the manager, whether for wages or not, in any mining operation, or in cleaning or oiling any part of any machinery used in or about the mine, or in any other kind of work whatsoever incidental to, or connected with, mining operations;

(*e*) "Inspector" means an Inspector of Mines appointed under this Act, and includes a District Magistrate when exercising any power or performing any duty of an Inspector which he is empowered by this Act to exercise or perform;

(*f*) "mine" means any excavation where any operation for the purpose of searching for or obtaining minerals has been or is being carried on, and includes all works, machinery, tramways and sidings, whether above or below ground, in or adjacent to or belonging to a mine:
provided that it shall not include any part of such premises on which a manufacturing process is being carried on unless such process is a process for coke making or the dressing of minerals;

(*g*) "owner," when used in relation to a mine, means any person who is the immediate proprietor or lessee or occupier of the mine or of any part thereof, but does not include a person who merely receives a royalty, rent or fine from the mine, or is merely the proprietor of the mine subject to any lease, grant or license for the working thereof, or is merely the owner of the soil and not interested in the minerals of the mine; but any contractor for the working of a mine or any part thereof shall be subject to this Act in like manner as if he were an owner, but not so as to exempt the owner from any liability;

(*h*) "prescribed" means prescribed by regulations, rules or bye-laws;

(*i*) "qualified medical practitioner" means any person registered under the Medical Act, 1858, or any Act amending the same or under any Act of any legislature in British India providing for the maintenance of a register of medical practitioners, and includes, in any area where no such last-mentioned Act is in force, any person declared by the Local Government, by notification in the local official Gazette, to be a qualified medical practitioner for the purposes of this Act; 21 & 22 Vict. C. 90.

(*j*) "regulations," "rules" and "bye-laws" mean respectively regulations, rules and bye-laws made under this Act;

(*k*) "serious bodily injury" means any injury which involves, or in all probability will involve, the permanent loss of the use of, or permanent injury to, any limb, or the permanent loss of or injury to the sight or hearing, or the fracture of any limb or the enforced absence of the injured person from work for a period exceeding twenty days; and

(*l*) "week" means the period between midnight on Saturday night and midnight on the succeeding Saturday night.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement no. 9—*contd.*

CHAPTER II.

Inspectors.

Chief Inspector and Inspectors.

4. (*1*) The Governor General in Council may, by notification in the Gazette of India, appoint a duly qualified person to be Chief Inspector of Mines for the whole of British India, and duly qualified persons to be Inspectors of Mines subordinate to the Chief Inspector.

(*2*) No person shall be appointed to be Chief Inspector or an Inspector, or, having been appointed, shall continue to hold such office who is or becomes directly or indirectly interested in any mine or mining rights in India.

(*3*) The District Magistrate may exercise the powers and perform the duties of an Inspector subject to the general or special orders of the Local Government:

Provided that nothing in this sub-section shall be deemed to empower a District Magistrate to exercise any of the powers conferred by section 19 or section 32.

(*4*) The Chief Inspector and every Inspector shall be deemed to be a public servant within the meaning of the Indian Penal Code. XLV of 1860.

Functions of Inspectors.

5. (*1*) The Chief Inspector may, by order in writing, prohibit or restrict the exercise by any Inspector named, or any class of Inspectors specified, in the order of any power conferred on Inspectors by this Act, and shall, subject as aforesaid, declare the local area or areas within which, or the group or class of mines with respect to which, Inspectors shall exercise their respective powers.

(*2*) The Inspector shall give information to owners, agents and managers of mines, situate within the local area or areas or belonging to the group or class of mines, in respect of which he exercises powers under sub-section (*1*) as to all regulations and rules which concern them respectively and as to the places where copies of such regulations and rules may be obtained.

Powers of Inspectors of Mines.

6. The Chief Inspector and any Inspector may—

(*a*) make such examination and inquiry as he thinks fit in order to ascertain whether the provisions of this Act and of the regulations, rules and bye-laws and of any orders made thereunder are observed in the case of any mine;

(*b*) with such assistants (if any) as he thinks fit, enter, inspect and examine any mine or any part thereof at any reasonable time by day or night, but not so as unreasonably to impede or obstruct the working of the mine;

(*c*) examine into, and make inquiry respecting, the state and condition of any mine or any part thereof, the ventilation of the mine, the sufficiency of the bye-laws for the time being in force relating to the mine, and all matters and things connected with or relating to the safety of the persons employed in the mine.

Powers of special officer to enter, measure, etc.

7. Any person in the service of the Government duly authorised by a special order in writing of the Chief Inspector or of an Inspector in this behalf may, for the purpose of surveying, levelling or measuring in any mine, after giving not less than three days' notice to the manager of such mine, enter the mine and may survey, level or measure the mine or any part thereof at any reasonable time by day or night, but not so as unreasonably to impede or obstruct the working of the mine.

Facilities to be afforded to Inspectors.

8. Every owner, agent and manager of a mine shall afford the Chief Inspector and every Inspector and every person authorised under section 7 all reasonable facilities for making any entry, inspection, survey, measurement, examination or inquiry under this Act.

Secrecy of information obtained.

9. (*1*) All copies of, and extracts from, registers or other records appertaining to any mine, and all other information acquired by the Chief Inspector or an Inspector or by any one assisting him in the course of the inspection of any mine under this Act or acquired by any person authorised under section 7 in the exercise of his duties thereunder, shall be regarded as confidential.

(*2*) If the Chief Inspector, or an Inspector or any other person referred to in sub-section (*1*) discloses to any one, other than a Magistrate or an officer to whom he is subordinate, any

such information as aforesaid without the consent of the Governor General in Council or of the Local Government, he shall be guilty of a breach of official trust, and shall be punishable in the manner provided by section 4 of the Indian Official Secrets Act, 1889. XV of 1889.

(3) No Court shall proceed to the trial of any offence under this section except on complaint made by order of, or under authority from, the Governor General in Council or the Local Government, or made by a person aggrieved by the offence.

CHAPTER III.

Mining Boards and Committees.

Mining Boards.

10. (1) The Local Government may constitute for the province, or for any part of the province, or for any group or class of mines in the province, a Mining Board consisting of—

(a) a person in the service of the Government, not being the Chief Inspector or an Inspector, nominated by the Local Government to act as chairman;

(b) the Chief Inspector or an Inspector;

(c) two persons, neither of whom shall be the Chief Inspector or an Inspector nominated by the Local Government, of whom one shall be a person qualified to represent the interests of persons employed in mines;

(d) two persons nominated by owners of mines or their representatives in such manner as may be prescribed.

(2) The chairman shall appoint a person to act as secretary to the Board.

(3) The Local Government may give directions as to the payment of travelling expenses incurred by the secretary or any member of any such Mining Board in the performance of his duty as such secretary or member.

Committees.

11. (1) Where under this Act any question relating to a mine is referred to a Committee, the Committee shall consist of—

(a) a chairman nominated by the Local Government or by such officer or authority as the Local Government may authorise in this behalf;

(b) a person nominated by the chairman and qualified by experience to dispose of the question referred to the Committee; and

(c) two persons of whom one shall be nominated by the owner, agent or manager of the mine concerned, and the other shall be nominated by the Local Government to represent the interests of the persons employed in the mine.

(2) No Inspector or person employed in or in the management of any mine concerned shall serve as chairman or member of a Committee appointed under this section.

(3) Where an owner, agent or manager fails to exercise his power of nomination under clause (c) of sub-section (1), the Committee may, notwithstanding such failure, proceed to inquire into and dispose of the matter referred to it.

(4) The Committee shall hear and record such information as the Chief Inspector or the Inspector, or the owner, agent or manager of the mine concerned, may place before it, and shall intimate its decision to the Chief Inspector or the Inspector and to the owner, agent or manager of the mine, and shall report its decision to the Local Government.

(5) On receiving such report the Local Government shall pass orders in conformity therewith unless the Chief Inspector or the owner, agent or manager of the mine has lodged an objection to the decision of the Committee, in which case the Local Government may proceed to review such decision and to pass such orders in the matter as it may think fit. If an objection is lodged by the Chief Inspector, notice of the same shall forthwith be given to the owner, agent or manager of the mine.

(6) The Local Government may give directions as to the remuneration, if any, to be paid to the members of the Committee or any of them, and as to the payment of the expenses of the inquiry including such remuneration.

Powers of Mining Boards.

12. (1) Any Mining Board constituted under section 10 and any Committee constituted under section 11 may exercise such of the powers of an Inspector under this Act as it thinks necessary or expedient to exercise for the purpose of deciding or reporting upon any matter referred to it.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement no. 9—*contd.*

V of 1908.

(*2*) Every Mining Board constituted under section 10 and every Committee appointed under section 11 shall have the powers of a Civil Court under the Code of Civil Procedure, 1908, for the purpose of enforcing the attendance of witnesses and compelling the production of documents and material objects; and every person required by any such Mining Board or Committee to furnish information before it shall be deemed to be legally bound to do so within the meaning of section 176 of the Indian Penal Code.

XLV of 1860.

Recovery of expenses.

13. The Local Government may direct that the expenses of any inquiry conducted by a Mining Board constituted under section 10 or by a Committee appointed under section 11 shall be borne in whole or in part by the owner or agent of the mine concerned, and the amount so directed to be paid may, on application by the Chief Inspector or an Inspector to a Magistrate having jurisdiction at the place where the mine is situated or where such owner or agent is for the time being resident, be recovered by the distress and sale of any moveable property within the limits of the Magistrate's jurisdiction belonging to such owner, agent or manager.

CHAPTER IV.

Mining Operations and Management of Mines.

Notice to be given of mining operations.

14. The owner, agent or manager of a mine shall, in the case of an existing mine within one month from the commencement of this Act or, in the case of a new mine, within three months after the commencement of mining operations, give to the District Magistrate of the district in which the mine is situated notice in writing in such form and containing such particulars relating to the mine as may be prescribed.

Managers.

15. (*1*) Save as may be otherwise prescribed, every mine shall be under one manager who shall have the prescribed qualifications and shall be responsible for the control, management and direction of the mine, and the owner or agent of every mine shall appoint himself or some other person, having such qualifications, to be such manager.

(*2*) If any mine is worked without there being a manager for the mine as required by sub-section (*1*), the owner and agent shall each be deemed to have contravened the provisions of this section.

Duties and responsibilities of owners, agents and managers.

16. (*1*) The owner, agent and manager of every mine shall be responsible that all operations carried on in connection therewith are conducted in accordance with the provisions of this Act and of the regulations, rules and bye-laws and of any orders made thereunder.

(*2*) In the event of any contravention of any such provisions by any person whomsoever, the owner, agent and manager of the mine shall each be deemed also to be guilty of such contravention unless he proves that he had taken all reasonable means, by publishing and to the best of his power enforcing those provisions, to prevent such contravention:

Provided that the owner or agent shall not be so deemed if he proves—

(*a*) that he was not in the habit of taking, and did not in respect of the matter in question take, any part in the management of the mine; and

(*b*) that he had made all the financial and other provisions necessary to enable the manager to carry out his duties; and

(*c*) that the offence was committed without his knowledge, consent or connivance.

(*3*) Save as hereinbefore provided, it shall not be a defence in any proceedings brought against an owner or agent of a mine under this section that a manager of the mine has been appointed in accordance with the provisions of this Act.

CHAPTER V.

Provisions as to Health and Safety.

Conservancy.

17. There shall be provided and maintained for every mine latrine and urinal accommodation of such kind and on such scale, and such supply of water fit for drinking, as may be prescribed.

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement no. 9—*contd.*

Medical appliances.

18. At every mine in respect of which the Local Government may, by notification in the local official Gazette, declare this section to apply, such supply of ambulances or stretchers, and of splints, bandages and other medical requirements, as may be prescribed, shall be kept ready at hand in a convenient place and in good and serviceable order.

Powers of Inspectors when causes of danger not expressly provided against exist or when employment of persons is dangerous.

19. (*1*) If, in any respect which is not provided against by any express provision of this Act or of the regulations, rules or bye-laws or of any orders made thereunder, it appears to the Chief Inspector or the Inspector that any mine, or any part thereof or any matter, thing or practice in or connected with the mine, or with the control, management or direction thereof, is dangerous to human life or safety, or defective so as to threaten, or tend to, the bodily injury of any person, he may give notice in writing thereof to the owner, agent or manager of the mine, and shall state in the notice the particulars in which he considers the mine, or part thereof, or the matter, thing or practice, to be dangerous or defective and require the same to be remedied within such time as he may specify in the notice.

(*2*) If the Chief Inspector or an Inspector authorised in this behalf by general or special order in writing by the Chief Inspector is of opinion that there is urgent and immediate danger to the life or safety of any person employed in any mine or part thereof, he may, by an order in writing containing a statement of the grounds of his opinion, prohibit, until the danger is removed, the employment in or about the mine or part thereof of any person whose employment is not in his opinion reasonably necessary for the purpose of removing the danger.

(*3*) Where an order has been made under sub-section (*2*) by an Inspector, the owner, agent or manager of the mine may, within ten days after the receipt of the order, appeal against the same to the Chief Inspector who may confirm, modify or cancel the order.

(*4*) The Chief Inspector or the Inspector making a requisition under sub-section (*1*) or an order under sub-section (*2*), and the Chief Inspector making an order (other than an order of cancellation in appeal under sub-section (*3*), shall forthwith report the same to the Local Government and shall inform the owner, agent or manager of the mine that such report has been so made.

(*5*) If the owner, agent or manager of the mine objects to a requisition made under sub-section (*1*) or to an order made by the Chief Inspector under sub-section (*2*), or sub-section (*3*), he may, within twenty days after the receipt of the notice containing the requisition or of the order or after the date of the decision of the appeal, as the case may be, send his objection in writing, stating the grounds thereof, to the Local Government, which shall refer the same to a Committee.

(*6*) Every requisition made under sub-section (*1*), or order made under sub-section (*2*), or sub-section (*3*) to which objection is made under sub-section (*5*), shall be complied with pending the receipt at the mine of the decision of the Committee :

Provided that the Committee may, on the application of the owner, agent or manager, suspend the operation of a requisition under sub-section (*1*) pending its decision on the objection.

(*7*) Nothing in this section shall affect the powers of a Magistrate under section 144 of the Code of Criminal Procedure, 1898. V of 1898.

Notice to be given of accidents.

20. When any accident occurs in or about a mine causing loss of life or serious bodily injury, or when an accidental explosion, ignition, outbreak of fire or irruption of water occurs in or about a mine, the owner, agent or manager of the mine shall give such notice of the occurrence to such authorities, and in such form, and within such time, as may be prescribed.

Power of Government to appoint court of inquiry in cases of accidents.

21. (*1*) When any accidental explosion, ignition, outbreak of fire or irruption of water or other accident has occurred in or about any mine, the Local Government, if it is of opinion that a formal inquiry into the causes of, and circumstances attending, the accident ought to be held, may appoint a competent person to hold such inquiry, and may also appoint any person or persons possessing legal or special knowledge to act as assessor or assessors in holding the inquiry.

(*2*) The person appointed to hold any such inquiry shall have all the powers of a Civil Court under the Code of Civil Procedure, 1908, for the purpose of enforcing the attendance of witnesses and compelling the production of documents and material objects; and every person V of 1908.

Statement no. 9—*contd.*

XLV of 1860.

required by such person as aforesaid to furnish any information shall be deemed to be legally bound to do so within the meaning of section 176 of the Indian Penal Code.

(*3*) Any person holding an inquiry under this section may exercise such of the powers of an Inspector under this Act as he may think it necessary or expedient to exercise for the purposes of the inquiry.

(*4*) The person holding an inquiry under this section shall make a report to the Local Government stating the causes of the accident and its circumstances, and adding any observations which he or any of the assessors may think fit to make.

Publication of reports.

22. The Local Government may cause any report submitted by a Committee under section 11 or by a court of inquiry under section 21 to be published at such time and in such manner as it may think fit.

CHAPTER VI.

Hours and Limitation of Employment.

Hours of employment.

23. No person shall be employed in a mine—

(*a*) on more than six days in any one week,

(*b*) if he works above ground, for more than sixty hours in any one week,

(*c*) if he works below ground, for more than fifty-four hours in any one week.

Supervising staff.

24. Nothing in section 23 shall apply to persons who may by rules be defined to be persons holding positions of supervision or management or employed in a confidential capacity.

Exemption from provisions regarding employment.

25. In case of an emergency involving serious risk to the safety of the mine or of persons employed therein, the manager may, subject to the provisions of section 19, permit persons to be employed in contravention of section 23 on such work as may be necessary to protect the safety of the mine or of the persons employed therein:

Provided that, where such occasion arises, a record of the fact shall immediately be made by the manager and shall be placed before the Chief Inspector or the Inspector at his next inspection of the mine.

Children.

26. No child shall be employed in a mine, or be allowed to be present in any part of a mine which is below ground.

Disputes as to age.

27. (*1*) If any question arises between the Chief Inspector or the Inspector and the manager of any mine as to whether any person is a child, the question shall, in the absence of a certificate as to the age of such person granted in the prescribed manner, be referred by the Chief Inspector or the Inspector for decision to a qualified medical practitioner.

(*2*) Every certificate as to the age of a person which has been granted in the prescribed manner and any certificate granted by a qualified medical practitioner on a reference under sub-section (*1*) shall, for the purposes of this Act, be conclusive evidence as to the age of the person to whom it relates.

Register of employees.

28. For every mine there shall be kept in the prescribed form and place a register of all persons employed in the mine, of their hours of work, of their days of rest, and of the nature of their respective employments.

CHAPTER VII.

Regulations, Rules and Bye-laws.

Power of Governor General in Council to make regulations.

29. The Governor General in Council may, by notification in the Gazette of India, make regulations consistent with this Act for all or any of the following purposes, namely:—

(*a*) for prescribing the qualifications to be required by a person for appointment as Chief Inspector or Inspector;

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement no. 9—*contd.*

(*b*) for prescribing and regulating the duties and powers of the Chief Inspector and of Inspectors in regard to the inspection of mines under this Act;

(*c*) for prescribing the duties of owners, agents and managers of mines and of persons acting under them;

(*d*) for prescribing the qualifications of managers of mines and of persons acting under them;

(*e*) for regulating the manner of ascertaining, by examination or otherwise, the qualifications of managers of mines and persons acting under them, and the granting and renewal of certificates of competency;

(*f*) for fixing the fees, if any, to be paid in respect of such examinations and of the grant and renewal of such certificates;

(*g*) for determining the circumstances in which and the conditions subject to which it shall be lawful for more mines than one to be under a single manager, or for any mine or mines to be under a manager not having the prescribed qualifications;

(*h*) for providing for the making of inquiries into charges of misconduct or incompetency on the part of managers of mines and persons acting under them and for the suspension and cancellation of certificates of competency;

(*i*) for regulating, subject to the provisions of the Indian Explosives Act, 1884, and of any rules made thereunder, the storage and use of explosives; IV of 1884

(*j*) for prohibiting, restricting or regulating the employment in mines or in any class of mines of women either below ground or on particular kinds of labour which are attended by danger to the life, safety or health of such women;

(*k*) for providing for the safety of the persons employed in a mine, their means of entrance thereinto and exit therefrom, the number of shafts or outlets to be furnished, and the fencing of shafts, pits, outlets, pathways and subsidences;

(*l*) for providing for the safety of the roads and working places in mines, including the siting and maintenance of pillars and the maintenance of sufficient barriers between mine and mine;

(*m*) for providing for the ventilation of mines and the action to be taken in respect of dust and noxious gases;

(*n*) for providing for the care, and the regulation of the use, of all machinery and plant and of all electrical apparatus used for signalling purposes;

(*o*) for requiring and regulating the use of safety lamps in mines;

(*p*) for providing against dangers arising out of the accumulation of water in mines;

(*q*) for prescribing the notices of accidents and dangerous occurrences, and the notices, reports and returns of mineral output, persons employed and other matters provided for by regulations, to be furnished by owners, agents and managers of mines, and for prescribing the forms of such notices, returns and reports, the persons and authorities to whom they are to be furnished, the particulars to be contained in them, and the time within which they are to be submitted;

(*r*) for prescribing the plans to be kept by owners, agents and managers of mines and the manner and places in which such plans are to be kept for purposes of record;

(*s*) for regulating the procedure on the occurrence of accidents or accidental explosions or ignitions in or about mines;

(*t*) for prescribing the form of, and the particulars to be contained in, the notice to be given by the owner, agent or manager of a mine under section 14; and

(*u*) for prescribing the notice to be given by the owner, agent or manager of a mine before mining operations are commenced at or extended to any point within fifty yards of any railway subject to the provisions of the Indian Railways Act, 1890, or of any public work or classes of public works which the Local Government may, by general or special order, specify in this behalf. IX of 1890.

Power of Local Governments to make rules.

30. The Local Government may, subject to the control of the Governor General in Council by notification in the local official Gazette, make rules consistent with this Act for all or any of the following purposes, namely:—

APPENDIX IV—*contd.*

MISCELLANEOUS—*contd.*

Statement no. 9—*contd.*

(*a*) for providing for the appointment of chairmen and members of Mining Boards, and for regulating the procedure of such Boards;

(*b*) for providing for the appointment of courts of inquiry under section 21, for regulating the procedure and powers of such courts, for the payment of travelling allowance to the members, and for the recovery of the expenses of such courts from the manager, owner or agent of the mine concerned;

(*c*) for prescribing the scale of latrine and urinal accommodation to be provided at mines, the provision to be made for the supply of drinking-water, the supply and maintenance of medical appliances and comforts, the formation and training of rescue brigades, and the training of men in ambulance work;

(*d*) for defining the persons who shall, for the purposes of section 24, be deemed to be persons holding positions of supervision or management or employed in a confidential capacity;

(*e*) for prohibiting the employment in mines of persons or any class of persons who have not been certified by a qualified medical practitioner to be more than thirteen years of age, and for prescribing the manner and the circumstances in which such certificates may be granted and revoked;

(*f*) for prescribing the form of register required by section 28;

(*g*) for prescribing abstracts of this Act and the vernacular in which the abstracts and the regulations, rules and bye-laws shall be posted as required by sections 32 and 33;

(*h*) for requiring the fencing of any mine or part of a mine, whether the same is being worked or not, where such fencing is necessary for the protection of the public;

(*i*) for the protection from injury, in respect of any mine when the workings are discontinued, of property vested in His Majesty or any local authority or railway company as defined in the Indian Railways Act, 1890;

IX of 1890.

(*j*) for requiring notices, returns and reports in connection with any matters dealt with by rules to be furnished by owners, agents and managers of mines, and for prescribing the forms of such notices, returns and reports, the persons and authorities to whom they are to be furnished, the particulars to be contained in them, and the times within which they are to be submitted; and

(*k*) generally to provide for any matter not provided for by this Act or the regulations, provision for which is required in order to give effect to this Act.

Prior publication of regulations and rules.

31. (*1*) The power to make regulations and rules conferred by sections 29 and 30 is subject to the condition of the regulations and rules being made after previous publication.

X of 1897.

(*2*) The date to be specified in accordance with clause (*3*) of section 23 of the General Clauses Act, 1897, as that after which a draft of regulations or rules proposed to be made will be taken under consideration, shall not be less than three months from the date on which the draft of the proposed regulations or rules is published for general information.

(*3*) Before the draft of any regulation or rule is published under this section it shall be referred in the case of a regulation to every Mining Board constituted in British India, and in the case of a rule to every Mining Board constituted in the province; and the regulation or rule shall not be so published until each such Board has had a reasonable opportunity of reporting as to the expediency of making the same and as to the suitability of its provisions.

(*4*) Regulations and rules shall be published in the Gazette of India and the local official Gazette, respectively, and, on such publication, shall have effect as if enacted in this Act.

Bye-laws.

32. (*1*) The owner, agent or manager of a mine may, and shall, if called upon to do so by the Chief Inspector or Inspector, frame and submit to the Chief Inspector or Inspector a draft of such bye-laws, not being inconsistent with this Act or any regulations or rules for the time being in force, for the control and guidance of the persons acting in the management of, or employed in, the mine as such owner, agent or manager may deem necessary to prevent accidents and provide for the safety, convenience and discipline of the persons employed in the mine.

(*2*) If any such owner, agent or manager—

(*a*) fails to submit within two months a draft of bye-laws after being called upon to do so by the Chief Inspector or Inspector, or

Statement no. 9—*contd.*

(*b*) submits a draft of bye-laws which is not in the opinion of the Chief Inspector or Inspector sufficient,

the Chief Inspector or Inspector may—

(*i*) propose a draft of such bye-laws as appear to him to be sufficient, or

(*ii*) propose such amendments in any draft submitted to him by the owner, agent or manager as will, in his opinion, render it sufficient,

and shall send such draft bye-laws or draft amendments to the owner, agent or manager, as the case may be, for consideration.

(*3*) If within a period of two months from the date on which any draft bye-laws or draft amendments are sent by the Chief Inspector or Inspector to the owner, agent or manager under the provisions of sub-section (*2*), the Chief Inspector or Inspector and the owner, agent or manager are unable to agree as to the terms of the bye-laws to be made under sub-section (*1*), the Chief Inspector or Inspector shall refer the draft bye-laws for settlement to the Mining Board or, where there is no Mining Board, to such officer or authority as the Local Government may, by general or special order, appoint in this behalf.

(*4*) (*a*) When such draft bye-laws have been agreed to by the owner, agent or manager and the Chief Inspector or Inspector, or, when they are unable to agree, have been settled by the Mining Board or such officer or authority as aforesaid, a copy of the draft bye-laws shall be sent by the Chief Inspector or Inspector to the Local Government for approval.

(*b*) The Local Government may make such modifications of the draft bye-laws as it thinks fit.

(*c*) Before the Local Government approves the draft bye-laws, whether with or without modifications, there shall be published, in such manner as the Local Government may think best adapted for informing the persons affected, notice of the proposal to make the bye-laws and of the place where copies of the draft bye-laws may be obtained, and of the time (which shall not be less than thirty days) within which any objections with reference to the draft bye-laws, made by or on behalf of persons affected, should be sent to the Local Government.

(*d*) Every objection shall be in writing and shall state—

(*i*) the specific grounds of objection and

(*ii*) the omissions, additions or modifications asked for.

(*e*) The Local Government shall consider any objection made within the required time by or on behalf of persons appearing to it to be affected, and may approve the bye-laws either in the form in which they were published or after making such amendments thereto as it thinks fit.

(*5*) The bye-laws, when so approved by the Local Government, shall have effect as if enacted in this Act, and the owner, agent or manager of the mine shall cause a copy of the bye-laws, in English and in such vernacular or vernaculars as may be prescribed, to be posted up in some conspicuous place at or near the mine, where the bye-laws may be conveniently read or seen by the persons employed; and, as often as the same become defaced, obliterated or destroyed, shall cause them to be renewed with all reasonable despatch.

(*6*) The Local Government may, by order in writing, rescind, in whole or in part, any bye-law so made, and thereupon such bye-law shall cease to have effect accordingly.

Posting up of extracts from Act, regulations, etc.

33. There shall be kept posted up at or near every mine in English and in such vernacular or vernaculars as may be prescribed, the prescribed abstracts of the Act and of the regulations and rules.

CHAPTER VIII.

Penalties and Procedure.

Obstruction.

34. (*1*) Whoever obstructs the Chief Inspector, an Inspector or any person authorised under section 7 in the discharge of his duties under this Act, or refuses or wilfully neglects to afford the Inspector, an Inspector or such person any reasonable facility for making any entry, inspection, examination or inquiry authorised by or under this Act in relation to any mine, shall be punishable with imprisonment for a term which may extend to three months, or with fine which may extend to five hundred rupees, or with both.

Statement no. 9—*contd.*

(*2*) Whoever refuses to produce on the demand of the Chief Inspector or Inspector any registers or other documents kept in pursuance of this Act, or prevents or attempts to prevent or does anything which he has reason to believe to be likely to prevent, any person from appearing before or being examined by an inspecting officer acting in pursuance of his duties under this Act, shall be punishable with fine which may extend to three hundred rupees.

Falsification of records, etc.

35. Whoever—

(*a*) counterfeits, or knowingly makes a false statement in, any certificate, or any official copy of a certificate, granted under this Act, or

(*b*) knowingly uses as true any such counterfeit or false certificate; or

(*c*) makes or produces or uses any false declaration, statement or evidence knowing the same to be false, for the purpose of obtaining for himself or for any other person a certificate, or the renewal of a certificate, under this Act, or any employment in a mine, or

(*d*) falsifies any plan or register or record the maintenance of which is required by or under this Act, or

(*e*) makes, gives or delivers any plan, return, notice, record or report containing a statement, entry or detail which is not to the best of his knowledge or belief true,

shall be punishable with imprisonment for a term which may extend to three months, or with fine which may extend to five hundred rupees, or with both.

Omission to furnish plans, etc.

36. Any person who, without reasonable excuse the burden of proving which shall lie upon him, omits to make or furnish in the prescribed form or manner or at or within the prescribed time any plan, return, notice, register, record or report required by or under this Act to be made or furnished shall be punishable with fine which may extend to two hundred rupees.

Contravention of provisions regarding employment of labour.

37. Whoever, save as permitted by section 25, contravenes any provision of this Act or of any regulation, rule or bye-law or of any order made thereunder prohibiting, restricting or regulating the employment or presence of persons in or about a mine shall be punishable with fine which may extend to five hundred rupees.

Notice of accidents.

38. Whoever, in contravention of the provisions of section 20, fails to give notice of any accidental occurrence shall, if the occurrence results in serious bodily injury, be punishable with fine which may extend to five hundred rupees, or, if the occurrence results in loss of life, be punishable with imprisonment which may extend to three months or with fine which may extend to five hundred rupees, or with both.

Disobedience of orders.

39. Whoever contravenes any provision of this Act or of any regulation, rule or bye-law or of any order made thereunder for the contravention of which no penalty is hereinbefore provided shall be punishable with fine which may extend to one thousand rupees, and, in the case of a continuing contravention, with further fine which may extend to one hundred rupees for every day on which the offender is proved to have persisted in the contravention after the date of the first conviction.

Contravention of law with dangerous results.

40. (*1*) Notwithstanding anything hereinbefore contained, whoever contravenes any provision of this Act or of any regulation, rule or bye-law or of any order made thereunder, shall be punishable, if such contravention results in loss of life, with imprisonment which may extend to one year, or with fine which may extend to two thousand rupees, or with both; or, if such contravention results in serious bodily injury, with imprisonment which may extend to six months, or with fine which may extend to one thousand rupees, or with both; or, if such contravention otherwise causes injury or danger to workers or other persons in or about the mine, with imprisonment which may extend to one month, or with fine which may extend to five hundred rupees, or with both.

(*2*) Where a person having been convicted under this section is again convicted thereunder, he shall be punishable with double the punishment provided by sub-section (*1*).

(*3*) Any Court imposing, or confirming in appeal, revision or otherwise, a sentence of fine passed under this section may, when passing judgment, order the whole or any part of

Statement no. 9—*contd.*

the fine recovered to be paid as compensation to the person injured, or, in the case of his death, to his legal representative;

Provided that, if the fine is imposed in a case which is subject to appeal, no such payment shall be made before the period allowed for presenting the appeal has elapsed, or, if an appeal has been presented, before the decision of the appeal.

Prosecution of owner, agent or manager.

41. No prosecution shall be instituted against any owner, agent or manager for any offence under this Act except at the instance of the Chief Inspector or of the District Magistrate or of an Inspector authorised in this behalf by general or special order in writing by the Chief Inspector.

Limitation of prosecutions.

42. No Court shall take cognizance of any offence under this Act unless complaint thereof has been made within six months of the date on which the offence is alleged to have been committed.

Cognizance of offences.

43. No Court inferior to that of a Presidency Magistrate or Magistrate of the first class shall try any offence under this Act which is alleged to have been committed by any owner, agent or manager of a mine or any offence which is by this Act made punishable with imprisonment.

Reference to Mining Board or Committee in lieu of prosecution in certain cases.

44. (*1*) If the Court trying any case instituted at the instance of the Chief Inspector or of the District Magistrate or of an Inspector under this Act is of opinion that the case is one which should, in lieu of a prosecution, be referred to a Mining Board or a Committee, it may stay the criminal proceedings, and report the matter to the Local Government with a view to such reference being made.

(*2*) On receipt of a report under sub-section (*1*), the Local Government may refer the case to a Mining Board or a Committee, or may direct the Court to proceed with the trial.

CHAPTER IX.

Miscellaneous.

Decision of question whether a mine is under this Act.

45. If any question arises as to whether any excavation or working is a mine within the meaning of this Act, the Local Government may decide the question, and a certificate signed by a Secretary to the Local Government shall be conclusive on the point.

Power to exempt from operation of Act.

46. (*1*) The Governor General in Council may, by notification in the Gazette of India, exempt any local area or any mine or group or class of mines or any part of a mine or any class of persons from the operation of all or any specified provisions of this Act:

Provided that no local area or mine or group or class of mines shall be exempted from the provisions of section 26 unless it is also exempted from the operation of all the other provisions of this Act.

(*2*) On the occurrence of any public emergency, the Local Government may, by an order in writing, confer any exemption which might be conferred by the Governor General in Council under sub-section (*1*). When such an order is made, a copy thereof shall forthwith be sent to the Governor General in Council.

Power to alter or rescind orders.

47. The Governor General in Council and every Local Government may reverse or modify any order passed under this Act by any authority subject to his or its control, as the case may be.

Application of Act to Crown mines.

48. This Act shall apply to mines belonging to the Crown.

Saving.

49. No suit, prosecution or other legal proceeding whatever shall lie against any person for anything which is in good faith done or intended to be done under this Act.

Repeals.

50. On and from the commencement of this Act, the enactments mentioned in the Schedule shall be repealed to the extent specified in the fourth column thereof.

APPENDIX IV—*concld.*

MISCELLANEOUS—*concld.*

Statement no. 9—*concld.*

THE SCHEDULE.

(See section 59.)

ENACTMENTS REPEALED.

Year.	No.	Short title.	Extent of repeal.
1901	VIII	The Indian Mines Act, 1901.	The whole.
1914	IV	The Decentralisation Act, 1914.	So much of the Schedule as relates to the Indian Mines Act, 1901.
„	X	The Repealing and Amending Act, 1914.	So much of the Second Schedule as relates to the Indian Mines Act, 1901.

H. MONCRIEFF SMITH,

Secretary to the Government of India.

Statement no. 10.

LAND ACQUISITION (MINES) ACT, 1885.

Particulars required to be furnished by colliery owners to Local Governments when giving notice under Section IV of the Land Acquisition (Mines) Act, 1885, of their intention to work coal under land acquired for a railway :—

(*a*) The name, residence and profession of the person giving the notice.

(*b*) The name of the mine, together with that of the village and district in which the mine is situate.

(*c*) The name of the railway line or of the siding and the main line to which the siding is attached, under which the mine is situate.

(*d*) The names of the railway stations and the mileage between which the said siding or the said portion of the railway land, under which the mine is situate, falls.

(*e*) The number and date of the declaration under which the land was acquired.

(*f*) A tracing showing the boundaries of, and the area over which, the acquired land extends.

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